

obtaining the total square area of the wound. Contraction is then estimated by establishing the differences between the initial wound area (day 0) and that of post treatment (day 8). The wound area on day 1 is 64mm², the corresponding size of the dermal punch. Calculations are made using the following formula:

5

$$[\text{Open area on day 8}] - [\text{Open area on day 1}] / [\text{Open area on day 1}]$$

Specimens are fixed in 10% buffered formalin and paraffin embedded blocks are sectioned perpendicular to the wound surface (5mm) and cut using a Reichert-Jung microtome.

10 Routine hematoxylin-eosin (H&E) staining is performed on cross-sections of bisected wounds. Histologic examination of the wounds are used to assess whether the healing process and the morphologic appearance of the repaired skin is altered by treatment with an agonist or antagonist of the invention. This assessment included verification of the presence of cell accumulation, inflammatory cells, capillaries, fibroblasts, re-epithelialization and
15 epidermal maturity (Greenhalgh, D.G. *et al.*, *Am. J. Pathol.* 136:1235 (1990)). A calibrated lens micrometer is used by a blinded observer.

Tissue sections are also stained immunohistochemically with a polyclonal rabbit anti-human keratin antibody using ABC Elite detection system. Human skin is used as a positive tissue control while non-immune IgG is used as a negative control. Keratinocyte growth is
20 determined by evaluating the extent of reepithelialization of the wound using a calibrated lens micrometer.

Proliferating cell nuclear antigen/cyclin (PCNA) in skin specimens is demonstrated by using anti-PCNA antibody (1:50) with an ABC Elite detection system. Human colon cancer served as a positive tissue control and human brain tissue is used as a negative tissue
25 control. Each specimen included a section with omission of the primary antibody and substitution with non-immune mouse IgG. Ranking of these sections is based on the extent of proliferation on a scale of 0-8, the lower side of the scale reflecting slight proliferation to the higher side reflecting intense proliferation.

Experimental data are analyzed using an unpaired t test. A p value of < 0.05 is
30 considered significant.

B. Steroid Impaired Rat Model

The inhibition of wound healing by steroids has been well documented in various *in vitro* and *in vivo* systems (Wahl, Glucocorticoids and Wound healing. In: Anti-Inflammatory Steroid Action: Basic and Clinical Aspects. 280-302 (1989); Wahlet *et al.*, *J. Immunol.* 115: 476-481 (1975); Werb *et al.*, *J. Exp. Med.* 147:1684-1694 (1978)). Glucocorticoids retard wound healing by inhibiting angiogenesis, decreasing vascular permeability (Ebert *et al.*, *An. Intern. Med.* 37:701-705 (1952)), fibroblast proliferation, and collagen synthesis (Beck *et al.*, *Growth Factors.* 5: 295-304 (1991); Haynes *et al.*, *J. Clin. Invest.* 61: 703-797 (1978)) and producing a transient reduction of circulating monocytes (Haynes *et al.*, *J. Clin. Invest.* 61: 703-797 (1978); Wahl, "Glucocorticoids and wound healing", In: Antiinflammatory Steroid Action: Basic and Clinical Aspects, Academic Press, New York, pp. 280-302 (1989)). The systemic administration of steroids to impaired wound healing is a well establish phenomenon in rats (Beck *et al.*, *Growth Factors.* 5: 295-304 (1991); Haynes *et al.*, *J. Clin. Invest.* 61: 703-797 (1978); Wahl, "Glucocorticoids and wound healing", In: Antiinflammatory Steroid Action: Basic and Clinical Aspects, Academic Press, New York, pp. 280-302 (1989); Pierce *et al.*, *Proc. Natl. Acad. Sci. USA* 86: 2229-2233 (1989)).

To demonstrate that an agonist or antagonist of the invention can accelerate the healing process, the effects of multiple topical applications of the agonist or antagonist on full thickness excisional skin wounds in rats in which healing has been impaired by the systemic administration of methylprednisolone is assessed.

Young adult male Sprague Dawley rats weighing 250-300 g (Charles River Laboratories) are used in this example. The animals are purchased at 8 weeks of age and are 9 weeks old at the beginning of the study. The healing response of rats is impaired by the systemic administration of methylprednisolone (17mg/kg/rat intramuscularly) at the time of wounding. Animals are individually housed and received food and water *ad libitum*. All manipulations are performed using aseptic techniques. This study is conducted according to the rules and guidelines of Human Genome Sciences, Inc. Institutional Animal Care and Use Committee and the Guidelines for the Care and Use of Laboratory Animals.

The wounding protocol is followed according to section A, above. On the day of wounding, animals are anesthetized with an intramuscular injection of ketamine (50 mg/kg) and xylazine (5 mg/kg). The dorsal region of the animal is shaved and the skin washed with 70% ethanol and iodine solutions. The surgical area is dried with sterile gauze prior to wounding. An 8 mm full-thickness wound is created using a Keyes tissue punch. The

wounds are left open for the duration of the experiment. Applications of the testing materials are given topically once a day for 7 consecutive days commencing on the day of wounding and subsequent to methylprednisolone administration. Prior to treatment, wounds are gently cleansed with sterile saline and gauze sponges.

5 Wounds are visually examined and photographed at a fixed distance at the day of wounding and at the end of treatment. Wound closure is determined by daily measurement on days 1-5 and on day 8. Wounds are measured horizontally and vertically using a calibrated Jameson caliper. Wounds are considered healed if granulation tissue is no longer visible and the wound is covered by a continuous epithelium.

10 The agonist or antagonist of the invention is administered using at a range different doses, from 4mg to 500mg per wound per day for 8 days in vehicle. Vehicle control groups received 50mL of vehicle solution.

 Animals are euthanized on day 8 with an intraperitoneal injection of sodium pentobarbital (300mg/kg). The wounds and surrounding skin are then harvested for
15 histology. Tissue specimens are placed in 10% neutral buffered formalin in tissue cassettes between biopsy sponges for further processing.

 Four groups of 10 animals each (5 with methylprednisolone and 5 without glucocorticoid) are evaluated: 1) Untreated group 2) Vehicle placebo control 3) treated groups.

20 Wound closure is analyzed by measuring the area in the vertical and horizontal axis and obtaining the total area of the wound. Closure is then estimated by establishing the differences between the initial wound area (day 0) and that of post treatment (day 8). The wound area on day 1 is 64mm², the corresponding size of the dermal punch. Calculations are made using the following formula:

25

$$[\text{Open area on day 8}] - [\text{Open area on day 1}] / [\text{Open area on day 1}]$$

Specimens are fixed in 10% buffered formalin and paraffin embedded blocks are sectioned perpendicular to the wound surface (5mm) and cut using an Olympus microtome. Routine
30 hematoxylin-eosin (H&E) staining is performed on cross-sections of bisected wounds. Histologic examination of the wounds allows assessment of whether the healing process and the morphologic appearance of the repaired skin is improved by treatment with an agonist or

antagonist of the invention. A calibrated lens micrometer is used by a blinded observer to determine the distance of the wound gap.

Experimental data are analyzed using an unpaired t test. A p value of < 0.05 is considered significant.

5 The studies described in this example tested activity of agonists or antagonists of the invention. However, one skilled in the art could easily modify the exemplified studies to test the activity of polynucleotides or polypeptides of the invention (e.g., gene therapy).

Example 29: Lymphadema Animal Model

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The purpose of this experimental approach is to create an appropriate and consistent lymphedema model for testing the therapeutic effects of an agonist or antagonist of the invention in lymphangiogenesis and re-establishment of the lymphatic circulatory system in the rat hind limb. Effectiveness is measured by swelling volume of the affected limb, quantification of the amount of lymphatic vasculature, total blood plasma protein, and histopathology. Acute lymphedema is observed for 7-10 days. Perhaps more importantly, the chronic progress of the edema is followed for up to 3-4 weeks.

15 Prior to beginning surgery, blood sample is drawn for protein concentration analysis. Male rats weighing approximately ~350g are dosed with Pentobarbital. Subsequently, the right legs are shaved from knee to hip. The shaved area is swabbed with gauze soaked in 70% EtOH. Blood is drawn for serum total protein testing. Circumference and volumetric measurements are made prior to injecting dye into paws after marking 2 measurement levels (0.5 cm above heel, at mid-pt of dorsal paw). The intradermal dorsum of both right and left paws are injected with 0.05 ml of 1% Evan's Blue. Circumference and volumetric measurements are then made following injection of dye into paws.

25 Using the knee joint as a landmark, a mid-leg inguinal incision is made circumferentially allowing the femoral vessels to be located. Forceps and hemostats are used to dissect and separate the skin flaps. After locating the femoral vessels, the lymphatic vessel that runs along side and underneath the vessel(s) is located. The main lymphatic vessels in this area are then electrically coagulated or suture ligated.

30 Using a microscope, muscles in back of the leg (near the semitendinosus and adductors) are bluntly dissected. The popliteal lymph node is then located. The 2 proximal

and 2 distal lymphatic vessels and distal blood supply of the popliteal node are then and ligated by suturing. The popliteal lymph node, and any accompanying adipose tissue, is then removed by cutting connective tissues.

Care is taken to control any mild bleeding resulting from this procedure. After
5 lymphatics are occluded, the skin flaps are sealed by using liquid skin (Vetbond) (AJ Buck). The separated skin edges are sealed to the underlying muscle tissue while leaving a gap of ~0.5 cm around the leg. Skin also may be anchored by suturing to underlying muscle when necessary.

To avoid infection, animals are housed individually with mesh (no bedding).
10 Recovering animals are checked daily through the optimal edematous peak, which typically occurred by day 5-7. The plateau edematous peak are then observed. To evaluate the intensity of the lymphedema, the circumference and volumes of 2 designated places on each paw before operation and daily for 7 days are measured. The effect plasma proteins on lymphedema is determined and whether protein analysis is a useful testing perimeter is also
15 investigated. The weights of both control and edematous limbs are evaluated at 2 places. Analysis is performed in a blind manner.

Circumference Measurements: Under brief gas anesthetic to prevent limb movement, a cloth tape is used to measure limb circumference. Measurements are done at the ankle bone and dorsal paw by 2 different people then those 2 readings are averaged. Readings are
20 taken from both control and edematous limbs.

Volumetric Measurements: On the day of surgery, animals are anesthetized with Pentobarbital and are tested prior to surgery. For daily volumetrics animals are under brief halothane anesthetic (rapid immobilization and quick recovery), both legs are shaved and equally marked using waterproof marker on legs. Legs are first dipped in water, then dipped
25 into instrument to each marked level then measured by Buxco edema software(Chen/Victor). Data is recorded by one person, while the other is dipping the limb to marked area.

Blood-plasma protein measurements: Blood is drawn, spun, and serum separated prior to surgery and then at conclusion for total protein and Ca²⁺ comparison.

Limb Weight Comparison: After drawing blood, the animal is prepared for tissue
30 collection. The limbs are amputated using a quillitine, then both experimental and control legs are cut at the ligature and weighed. A second weighing is done as the tibio-cacaneal joint is disarticulated and the foot is weighed.

Histological Preparations: The transverse muscle located behind the knee (popliteal) area is dissected and arranged in a metal mold, filled with freezeGel, dipped into cold methylbutane, placed into labeled sample bags at - 80EC until sectioning. Upon sectioning, the muscle is observed under fluorescent microscopy for lymphatics..

- 5 The studies described in this example tested activity of agonists or antagonists of the invention. However, one skilled in the art could easily modify the exemplified studies to test the activity of polynucleotides or polypeptides of the invention (e.g., gene therapy).

10 *Example 30: Suppression of TNF alpha-induced adhesion molecule expression by a Agonist or Antagonist of the Invention*

The recruitment of lymphocytes to areas of inflammation and angiogenesis involves specific receptor-ligand interactions between cell surface adhesion molecules (CAMs) on lymphocytes and the vascular endothelium. The adhesion process, in both normal and
15 pathological settings, follows a multi-step cascade that involves intercellular adhesion molecule-1 (ICAM-1), vascular cell adhesion molecule-1 (VCAM-1), and endothelial leukocyte adhesion molecule-1 (E-selectin) expression on endothelial cells (EC). The expression of these molecules and others on the vascular endothelium determines the efficiency with which leukocytes may adhere to the local vasculature and extravasate into the
20 local tissue during the development of an inflammatory response. The local concentration of cytokines and growth factor participate in the modulation of the expression of these CAMs.

Tumor necrosis factor alpha (TNF-a), a potent proinflammatory cytokine, is a stimulator of all three CAMs on endothelial cells and may be involved in a wide variety of inflammatory responses, often resulting in a pathological outcome.

- 25 The potential of an agonist or antagonist of the invention to mediate a suppression of TNF-a induced CAM expression can be examined. A modified ELISA assay which uses ECs as a solid phase absorbent is employed to measure the amount of CAM expression on TNF-a treated ECs when co-stimulated with a member of the FGF family of proteins.

To perform the experiment, human umbilical vein endothelial cell (HUVEC) cultures
30 are obtained from pooled cord harvests and maintained in growth medium (EGM-2; Clonetics, San Diego, CA) supplemented with 10% FCS and 1% penicillin/streptomycin in a 37 degree C humidified incubator containing 5% CO₂. HUVECs are seeded in 96-well

plates at concentrations of 1×10^4 cells/well in EGM medium at 37 degree C for 18-24 hrs or until confluent. The monolayers are subsequently washed 3 times with a serum-free solution of RPMI-1640 supplemented with 100 U/ml penicillin and 100 mg/ml streptomycin, and treated with a given cytokine and/or growth factor(s) for 24 h at 37 degree C. Following incubation, the cells are then evaluated for CAM expression.

Human Umbilical Vein Endothelial cells (HUVECs) are grown in a standard 96 well plate to confluence. Growth medium is removed from the cells and replaced with 90 ul of 199 Medium (10% FBS). Samples for testing and positive or negative controls are added to the plate in triplicate (in 10 ul volumes). Plates are incubated at 37 degree C for either 5 h (selectin and integrin expression) or 24 h (integrin expression only). Plates are aspirated to remove medium and 100 μ l of 0.1% paraformaldehyde-PBS(with Ca^{++} and Mg^{++}) is added to each well. Plates are held at 4°C for 30 min.

Fixative is then removed from the wells and wells are washed 1X with PBS(+Ca,Mg)+0.5% BSA and drained. Do not allow the wells to dry. Add 10 μ l of diluted primary antibody to the test and control wells. Anti-ICAM-1-Biotin, Anti-VCAM-1-Biotin and Anti-E-selectin-Biotin are used at a concentration of 10 μ g/ml (1:10 dilution of 0.1 mg/ml stock antibody). Cells are incubated at 37°C for 30 min. in a humidified environment. Wells are washed X3 with PBS(+Ca,Mg)+0.5% BSA.

Then add 20 μ l of diluted ExtrAvidin-Alkaline Phosphatase (1:5,000 dilution) to each well and incubated at 37°C for 30 min. Wells are washed X3 with PBS(+Ca,Mg)+0.5% BSA. 1 tablet of p-Nitrophenol Phosphate pNPP is dissolved in 5 ml of glycine buffer (pH 10.4). 100 μ l of pNPP substrate in glycine buffer is added to each test well. Standard wells in triplicate are prepared from the working dilution of the ExtrAvidin-Alkaline Phosphatase in glycine buffer: $1:5,000 (10^0) > 10^{-0.5} > 10^{-1} > 10^{-1.5}$. 5 μ l of each dilution is added to triplicate wells and the resulting AP content in each well is 5.50 ng, 1.74 ng, 0.55 ng, 0.18 ng. 100 μ l of pNNP reagent must then be added to each of the standard wells. The plate must be incubated at 37°C for 4h. A volume of 50 μ l of 3M NaOH is added to all wells. The results are quantified on a plate reader at 405 nm. The background subtraction option is used on blank wells filled with glycine buffer only. The template is set up to indicate the concentration of AP-conjugate in each standard well [5.50 ng; 1.74 ng; 0.55 ng; 0.18 ng]. Results are indicated as amount of bound AP-conjugate in each sample.

The studies described in this example tested activity of agonists or antagonists of the

invention. However, one skilled in the art could easily modify the exemplified studies to test the activity of polynucleotides or polypeptides of the invention (e.g., gene therapy).

Example 31: Production Of Polypeptide of the Invention For High-Throughput Screening Assays

The following protocol produces a supernatant containing polypeptide of the present invention to be tested. This supernatant can then be used in the Screening Assays described in Examples 33-42.

First, dilute Poly-D-Lysine (644 587 Boehringer-Mannheim) stock solution (1mg/ml in PBS) 1:20 in PBS (w/o calcium or magnesium 17-516F Biowhittaker) for a working solution of 50ug/ml. Add 200 ul of this solution to each well (24 well plates) and incubate at RT for 20 minutes. Be sure to distribute the solution over each well (note: a 12-channel pipetter may be used with tips on every other channel). Aspirate off the Poly-D-Lysine solution and rinse with 1ml PBS (Phosphate Buffered Saline). The PBS should remain in the well until just prior to plating the cells and plates may be poly-lysine coated in advance for up to two weeks.

Plate 293T cells (do not carry cells past P+20) at 2×10^5 cells/well in .5ml DMEM(Dulbecco's Modified Eagle Medium)(with 4.5 G/L glucose and L-glutamine (12-604F Biowhittaker))/10% heat inactivated FBS(14-503F Biowhittaker)/1x Penstrep(17-602E Biowhittaker). Let the cells grow overnight.

The next day, mix together in a sterile solution basin: 300 ul Lipofectamine (18324-012 Gibco/BRL) and 5ml Optimem I (31985070 Gibco/BRL)/96-well plate. With a small volume multi-channel pipetter, aliquot approximately 2ug of an expression vector containing a polynucleotide insert, produced by the methods described in Examples 8-10, into an appropriately labeled 96-well round bottom plate. With a multi-channel pipetter, add 50ul of the Lipofectamine/Optimem I mixture to each well. Pipette up and down gently to mix. Incubate at RT 15-45 minutes. After about 20 minutes, use a multi-channel pipetter to add 150ul Optimem I to each well. As a control, one plate of vector DNA lacking an insert should be transfected with each set of transfections.

Preferably, the transfection should be performed by tag-teaming the following tasks. By tag-teaming, hands on time is cut in half, and the cells do not spend too much time on

PBS. First, person A aspirates off the media from four 24-well plates of cells, and then person B rinses each well with .5-1ml PBS. Person A then aspirates off PBS rinse, and person B, using a 12-channel pipetter with tips on every other channel, adds the 200ul of DNA/Lipofectamine/Optimem 1 complex to the odd wells first, then to the even wells, to each row on the 24-well plates. Incubate at 37 degree C for 6 hours.

While cells are incubating, prepare appropriate media, either 1%BSA in DMEM with 1x penstrep, or HGS CHO-5 media (116.6 mg/L of CaCl₂ (anhyd); 0.00130 mg/L CuSO₄·5H₂O; 0.050 mg/L of Fe(NO₃)₃·9H₂O; 0.417 mg/L of FeSO₄·7H₂O; 311.80 mg/L of KCl; 28.64 mg/L of MgCl₂; 48.84 mg/L of MgSO₄; 6995.50 mg/L of NaCl; 2400.0 mg/L of NaHCO₃; 62.50 mg/L of NaH₂PO₄·H₂O; 71.02 mg/L of Na₂HPO₄; .4320 mg/L of ZnSO₄·7H₂O; .002 mg/L of Arachidonic Acid ; 1.022 mg/L of Cholesterol; .070 mg/L of DL-alpha-Tocopherol-Acetate; 0.0520 mg/L of Linoleic Acid; 0.010 mg/L of Linolenic Acid; 0.010 mg/L of Myristic Acid; 0.010 mg/L of Oleic Acid; 0.010 mg/L of Palmitric Acid; 0.010 mg/L of Palmitic Acid; 100 mg/L of Pluronic F-68; 0.010 mg/L of Stearic Acid; 2.20 mg/L of Tween 80; 4551 mg/L of D-Glucose; 130.85 mg/ml of L- Alanine; 147.50 mg/ml of L-Arginine-HCL; 7.50 mg/ml of L-Asparagine-H₂O; 6.65 mg/ml of L-Aspartic Acid; 29.56 mg/ml of L-Cystine-2HCL-H₂O; 31.29 mg/ml of L-Cystine-2HCL; 7.35 mg/ml of L-Glutamic Acid; 365.0 mg/ml of L-Glutamine; 18.75 mg/ml of Glycine; 52.48 mg/ml of L-Histidine-HCL-H₂O; 106.97 mg/ml of L-Isoleucine; 111.45 mg/ml of L-Leucine; 163.75 mg/ml of L-Lysine HCL; 32.34 mg/ml of L-Methionine; 68.48 mg/ml of L-Phenylalanine; 40.0 mg/ml of L-Proline; 26.25 mg/ml of L-Serine; 101.05 mg/ml of L-Threonine; 19.22 mg/ml of L-Tryptophan; 91.79 mg/ml of L-Tyrosine-2Na-2H₂O; and 99.65 mg/ml of L-Valine; 0.0035 mg/L of Biotin; 3.24 mg/L of D-Ca Pantothenate; 11.78 mg/L of Choline Chloride; 4.65 mg/L of Folic Acid; 15.60 mg/L of i-Inositol; 3.02 mg/L of Niacinamide; 3.00 mg/L of Pyridoxal HCL; 0.031 mg/L of Pyridoxine HCL; 0.319 mg/L of Riboflavin; 3.17 mg/L of Thiamine HCL; 0.365 mg/L of Thymidine; 0.680 mg/L of Vitamin B₁₂; 25 mM of HEPES Buffer; 2.39 mg/L of Na Hypoxanthine; 0.105 mg/L of Lipoic Acid; 0.081 mg/L of Sodium Putrescine-2HCL; 55.0 mg/L of Sodium Pyruvate; 0.0067 mg/L of Sodium Selenite; 20uM of Ethanolamine; 0.122 mg/L of Ferric Citrate; 41.70 mg/L of Methyl-B-Cyclodextrin complexed with Linoleic Acid; 33.33 mg/L of Methyl-B-Cyclodextrin complexed with Oleic Acid; 10 mg/L of Methyl-B-Cyclodextrin complexed with Retinal Acetate. Adjust

osmolarity to 327 mOsm) with 2mm glutamine and 1x penstrep. (BSA (81-068-3 Bayer) 100gm dissolved in 1L DMEM for a 10% BSA stock solution). Filter the media and collect 50 ul for endotoxin assay in 15ml polystyrene conical.

5 The transfection reaction is terminated, preferably by tag-teaming, at the end of the incubation period. Person A aspirates off the transfection media, while person B adds 1.5ml appropriate media to each well. Incubate at 37 degree C for 45 or 72 hours depending on the media used: 1%BSA for 45 hours or CHO-5 for 72 hours.

10 On day four, using a 300ul multichannel pipetter, aliquot 600ul in one 1ml deep well plate and the remaining supernatant into a 2ml deep well. The supernatants from each well can then be used in the assays described in Examples 33-40.

It is specifically understood that when activity is obtained in any of the assays described below using a supernatant, the activity originates from either the polypeptide of the present invention directly (e.g., as a secreted protein) or by polypeptide of the present invention inducing expression of other proteins, which are then secreted into the supernatant.
15 Thus, the invention further provides a method of identifying the protein in the supernatant characterized by an activity in a particular assay.

Example 32: Construction of GAS Reporter Construct

20 One signal transduction pathway involved in the differentiation and proliferation of cells is called the Jaks-STATs pathway. Activated proteins in the Jaks-STATs pathway bind to gamma activation site "GAS" elements or interferon-sensitive responsive element ("ISRE"), located in the promoter of many genes. The binding of a protein to these elements alter the expression of the associated gene.

25 GAS and ISRE elements are recognized by a class of transcription factors called Signal Transducers and Activators of Transcription, or "STATs." There are six members of the STATs family. Stat1 and Stat3 are present in many cell types, as is Stat2 (as response to IFN-alpha is widespread). Stat4 is more restricted and is not in many cell types though it has been found in T helper class I, cells after treatment with IL-12. Stat5 was originally called
30 mammary growth factor, but has been found at higher concentrations in other cells including myeloid cells. It can be activated in tissue culture cells by many cytokines.

The STATs are activated to translocate from the cytoplasm to the nucleus upon

tyrosine phosphorylation by a set of kinases known as the Janus Kinase ("Jaks") family. Jaks represent a distinct family of soluble tyrosine kinases and include Tyk2, Jak1, Jak2, and Jak3. These kinases display significant sequence similarity and are generally catalytically inactive in resting cells.

5 The Jaks are activated by a wide range of receptors summarized in the Table below. (Adapted from review by Schidler and Darnell, *Ann. Rev. Biochem.* 64:621-51 (1995).) A cytokine receptor family, capable of activating Jaks, is divided into two groups: (a) Class 1 includes receptors for IL-2, IL-3, IL-4, IL-6, IL-7, IL-9, IL-11, IL-12, IL-15, Epo, PRL, GH, G-CSF, GM-CSF, LIF, CNTF, and thrombopoietin; and (b) Class 2 includes IFN- α , IFN- γ ,
10 and IL-10. The Class 1 receptors share a conserved cysteine motif (a set of four conserved cysteines and one tryptophan) and a WSXWS motif (a membrane proximal region encoding Trp-Ser-Xxx-Trp-Ser (SEQ ID NO:1686)).

 Thus, on binding of a ligand to a receptor, Jaks are activated, which in turn activate STATs, which then translocate and bind to GAS elements. This entire process is
15 encompassed in the Jaks-STATs signal transduction pathway.

 Therefore, activation of the Jaks-STATs pathway, reflected by the binding of the GAS or the ISRE element, can be used to indicate proteins involved in the proliferation and differentiation of cells. For example, growth factors and cytokines are known to activate the Jaks-STATs pathway. (See Table below.) Thus, by using GAS elements linked to reporter
20 molecules, activators of the Jaks-STATs pathway can be identified.

	<u>Ligand</u>	<u>JAKs</u>				<u>STATs GAS(elements) or ISRE</u>	
		<u>tyk2</u>	<u>Jak1</u>	<u>Jak2</u>	<u>Jak3</u>		
	<u>IFN family</u>						
5	IFN-a/B	+	+	-	-	1,2,3	ISRE
	IFN-g		+	+	-	1	GAS
	(IRF1>Lys6>IFP)						
	Il-10	+	?	?	-	1,3	
10	<u>gp130 family</u>						
	IL-6 (Pleiotrohic)	+	+	+	?	1,3	GAS
	(IRF1>Lys6>IFP)						
	Il-11(Pleiotrohic)	?	+	?	?	1,3	
	OnM(Pleiotrohic)	?	+	+	?	1,3	
15	LIF(Pleiotrohic)	?	+	+	?	1,3	
	CNTF(Pleiotrohic)	-/+	+	+	?	1,3	
	G-CSF(Pleiotrohic)	?	+	?	?	1,3	
	IL-12(Pleiotrohic)	+	-	+	+	1,3	
20	<u>g-C family</u>						
	IL-2 (lymphocytes)	-	+	-	+	1,3,5	GAS
	IL-4 (lymph/myeloid)	-	+	-	+	6	GAS (IRF1 = IFP
	>>Ly6)(IgH)						
	IL-7 (lymphocytes)	-	+	-	+	5	GAS
25	IL-9 (lymphocytes)	-	+	-	+	5	GAS
	IL-13 (lymphocyte)	-	+	?	?	6	GAS
	IL-15	?	+	?	+	5	GAS
	<u>gp140 family</u>						
30	IL-3 (myeloid)	-	-	+	-	5	GAS
	(IRF1>IFP>>Ly6)						
	IL-5 (myeloid)	-	-	+	-	5	GAS
	GM-CSF (myeloid)	-	-	+	-	5	GAS

510

Growth hormone family

	GH	?	-	+	-	5	
	PRL	?	+/-	+	-	1,3,5	
5	EPO	?	-	+	-	5	GAS(B-
	CAS>IRF1=IFP>>Ly6)						

Receptor Tyrosine Kinases

	EGF	?	+	+	-	1,3	GAS (IRF1)
10	PDGF	?	+	+	-	1,3	
	CSF-1	?	+	+	-	1,3	GAS (not IRF1)

To construct a synthetic GAS containing promoter element, which is used in the Biological Assays described in Examples 33-34, a PCR based strategy is employed to generate a GAS-SV40 promoter sequence. The 5' primer contains four tandem copies of the GAS binding site found in the IRF1 promoter and previously demonstrated to bind STATs upon induction with a range of cytokines (Rothman et al., Immunity 1:457-468 (1994).), although other GAS or ISRE elements can be used instead. The 5' primer also contains 18bp of sequence complementary to the SV40 early promoter sequence and is flanked with an XhoI site. The sequence of the 5' primer is:

10 5':GCGCCTCGAGATTTCCCGAAATCTAGATTTCCCGAAATGATTTCCCG
GAAATGATTTCCCGAAATATCTGCCATCTCAATTAG:3' (SEQ ID NO:1687)

The downstream primer is complementary to the SV40 promoter and is flanked with a Hind III site: 5':GCGGCAAGCTTTTTGCAAAGCCTAGGC:3' (SEQ ID NO:1688)

15 PCR amplification is performed using the SV40 promoter template present in the B-gal:promoter plasmid obtained from Clontech. The resulting PCR fragment is digested with XhoI/Hind III and subcloned into BLSK2-. (Stratagene.) Sequencing with forward and reverse primers confirms that the insert contains the following sequence:

20 5':CTCGAGATTTCCCGAAATCTAGATTTCCCGAAATGATTTCCCGAAA
TGATTTCCCGAAATATCTGCCATCTCAATTAGTCAGCAACCATAGTCCCG
CCCCTAACTCCGCCCATCCCGCCCCTAACTCCGCCCCAGTTCCGCCCATTTCT
CCGCCCCATGGCTGACTAATTTTTTTTATTTATGCAGAGGCCGAGGCCGCC
TCGGCCTCTGAGCTATTCCAGAAGTAGTGAGGAGGCTTTTTTGGAGGCCTA
25 GGCTTTTGCAAAAAAGCTT:3' (SEQ ID NO:1689)

With this GAS promoter element linked to the SV40 promoter, a GAS:SEAP2 reporter construct is next engineered. Here, the reporter molecule is a secreted alkaline phosphatase, or "SEAP." Clearly, however, any reporter molecule can be instead of SEAP, in this or in any of the other Examples. Well known reporter molecules that can be used instead of SEAP include chloramphenicol

acetyltransferase (CAT), luciferase, alkaline phosphatase, B-galactosidase, green fluorescent protein (GFP), or any protein detectable by an antibody.

The above sequence confirmed synthetic GAS-SV40 promoter element is subcloned into the pSEAP-Promoter vector obtained from Clontech using HindIII and XhoI, effectively replacing the SV40 promoter with the amplified GAS:SV40 promoter element, to create the GAS-SEAP vector. However, this vector does not contain a neomycin resistance gene, and therefore, is not preferred for mammalian expression systems.

Thus, in order to generate mammalian stable cell lines expressing the GAS-SEAP reporter, the GAS-SEAP cassette is removed from the GAS-SEAP vector using SalI and NotI, and inserted into a backbone vector containing the neomycin resistance gene, such as pGFP-1 (Clontech), using these restriction sites in the multiple cloning site, to create the GAS-SEAP/Neo vector. Once this vector is transfected into mammalian cells, this vector can then be used as a reporter molecule for GAS binding as described in Examples 33-34.

Other constructs can be made using the above description and replacing GAS with a different promoter sequence. For example, construction of reporter molecules containing NFK-B and EGR promoter sequences are described in Examples 35 and 36. However, many other promoters can be substituted using the protocols described in these Examples. For instance, SRE, IL-2, NFAT, or Osteocalcin promoters can be substituted, alone or in combination (e.g., GAS/NF-KB/EGR, GAS/NF-KB, IL-2/NFAT, or NF-KB/GAS). Similarly, other cell lines can be used to test reporter construct activity, such as HELA (epithelial), HUVEC (endothelial), Reh (B-cell), Saos-2 (osteoblast), HUVAC (aortic), or Cardiomyocyte.

Example 33: High-Throughput Screening Assay for T-cell Activity.

The following protocol is used to assess T-cell activity by identifying factors, and determining whether supernate containing a polypeptide of the invention proliferates and/or differentiates T-cells. T-cell activity is assessed using the

GAS/SEAP/Neo construct produced in Example 32. Thus, factors that increase SEAP activity indicate the ability to activate the Jaks-STATS signal transduction pathway. The T-cell used in this assay is Jurkat T-cells (ATCC Accession No. TIB-152), although Molt-3 cells (ATCC Accession No. CRL-1552) and Molt-4 cells (ATCC
5 Accession No. CRL-1582) cells can also be used.

Jurkat T-cells are lymphoblastic CD4+ Th1 helper cells. In order to generate stable cell lines, approximately 2 million Jurkat cells are transfected with the GAS-SEAP/neo vector using DMRIE-C (Life Technologies)(transfection procedure described below). The transfected cells are seeded to a density of approximately
10 20,000 cells per well and transfectants resistant to 1 mg/ml gentamicin selected. Resistant colonies are expanded and then tested for their response to increasing concentrations of interferon gamma. The dose response of a selected clone is demonstrated.

Specifically, the following protocol will yield sufficient cells for 75 wells
15 containing 200 ul of cells. Thus, it is either scaled up, or performed in multiple to generate sufficient cells for multiple 96 well plates. Jurkat cells are maintained in RPMI + 10% serum with 1% Pen-Strep. Combine 2.5 mls of OPTI-MEM (Life Technologies) with 10 ug of plasmid DNA in a T25 flask. Add 2.5 ml OPTI-MEM containing 50 ul of DMRIE-C and incubate at room temperature for 15-45 mins.

20 During the incubation period, count cell concentration, spin down the required number of cells (10^7 per transfection), and resuspend in OPTI-MEM to a final concentration of 10^7 cells/ml. Then add 1ml of 1×10^7 cells in OPTI-MEM to T25 flask and incubate at 37 degree C for 6 hrs. After the incubation, add 10 ml of RPMI + 15% serum.

25 The Jurkat:GAS-SEAP stable reporter lines are maintained in RPMI + 10% serum, 1 mg/ml Gentamicin, and 1% Pen-Strep. These cells are treated with supernatants containing polypeptide of the present invention or polypeptide of the present invention induced polypeptides as produced by the protocol described in Example 31.

30 On the day of treatment with the supernatant, the cells should be washed and

resuspended in fresh RPMI + 10% serum to a density of 500,000 cells per ml. The exact number of cells required will depend on the number of supernatants being screened. For one 96 well plate, approximately 10 million cells (for 10 plates, 100 million cells) are required.

5 Transfer the cells to a triangular reservoir boat, in order to dispense the cells into a 96 well dish, using a 12 channel pipette. Using a 12 channel pipette, transfer 200 ul of cells into each well (therefore adding 100, 000 cells per well).

 After all the plates have been seeded, 50 ul of the supernatants are transferred directly from the 96 well plate containing the supernatants into each well using a 12
10 channel pipette. In addition, a dose of exogenous interferon gamma (0.1, 1.0, 10 ng) is added to wells H9, H10, and H11 to serve as additional positive controls for the assay.

 The 96 well dishes containing Jurkat cells treated with supernatants are placed in an incubator for 48 hrs (note: this time is variable between 48-72 hrs). 35 ul
15 samples from each well are then transferred to an opaque 96 well plate using a 12 channel pipette. The opaque plates should be covered (using sellophene covers) and stored at -20 degree C until SEAP assays are performed according to Example 37. The plates containing the remaining treated cells are placed at 4 degree C and serve as a source of material for repeating the assay on a specific well if desired.

20 As a positive control, 100 Unit/ml interferon gamma can be used which is known to activate Jurkat T cells. Over 30 fold induction is typically observed in the positive control wells.

 The above protocol may be used in the generation of both transient, as well as, stable transfected cells, which would be apparent to those of skill in the art.

25

Example 34: High-Throughput Screening Assay Identifying Myeloid Activity

 The following protocol is used to assess myeloid activity of polypeptide of the present invention by determining whether polypeptide of the present invention
30 proliferates and/or differentiates myeloid cells. Myeloid cell activity is assessed using

the GAS/SEAP/Neo construct produced in Example 32. Thus, factors that increase SEAP activity indicate the ability to activate the Jaks-STATS signal transduction pathway. The myeloid cell used in this assay is U937, a pre-monocyte cell line, although TF-1, HL60, or KG1 can be used.

5 To transiently transfect U937 cells with the GAS/SEAP/Neo construct produced in Example 32, a DEAE-Dextran method (Kharbanda et. al., 1994, Cell Growth & Differentiation, 5:259-265) is used. First, harvest 2×10^7 U937 cells and wash with PBS. The U937 cells are usually grown in RPMI 1640 medium containing 10% heat-inactivated fetal bovine serum (FBS) supplemented with 100 units/ml
10 penicillin and 100 mg/ml streptomycin.

Next, suspend the cells in 1 ml of 20 mM Tris-HCl (pH 7.4) buffer containing 0.5 mg/ml DEAE-Dextran, 8 ug GAS-SEAP2 plasmid DNA, 140 mM NaCl, 5 mM KCl, 375 uM $\text{Na}_2\text{HPO}_4 \cdot 7\text{H}_2\text{O}$, 1 mM MgCl_2 , and 675 uM CaCl_2 . Incubate at 37 degrees C for 45 min.

15 Wash the cells with RPMI 1640 medium containing 10% FBS and then resuspend in 10 ml complete medium and incubate at 37 degree C for 36 hr.

The GAS-SEAP/U937 stable cells are obtained by growing the cells in 400 ug/ml G418. The G418-free medium is used for routine growth but every one to two months, the cells should be re-grown in 400 ug/ml G418 for couple of passages.

20 These cells are tested by harvesting 1×10^8 cells (this is enough for ten 96-well plates assay) and wash with PBS. Suspend the cells in 200 ml above described growth medium, with a final density of 5×10^5 cells/ml. Plate 200 ul cells per well in the 96-well plate (or 1×10^5 cells/well).

Add 50 ul of the supernatant prepared by the protocol described in Example
25 31. Incubate at 37 degree C for 48 to 72 hr. As a positive control, 100 Unit/ml interferon gamma can be used which is known to activate U937 cells. Over 30 fold induction is typically observed in the positive control wells. SEAP assay the supernatant according to the protocol described in Example 37.

30 *Example 35: High-Throughput Screening Assay Identifying Neuronal Activity.*

When cells undergo differentiation and proliferation, a group of genes are activated through many different signal transduction pathways. One of these genes, EGR1 (early growth response gene 1), is induced in various tissues and cell types upon activation. The promoter of EGR1 is responsible for such induction. Using the EGR1 promoter linked to reporter molecules, activation of cells can be assessed by polypeptide of the present invention.

Particularly, the following protocol is used to assess neuronal activity in PC12 cell lines. PC12 cells (rat phenochromocytoma cells) are known to proliferate and/or differentiate by activation with a number of mitogens, such as TPA (tetradecanoyl phorbol acetate), NGF (nerve growth factor), and EGF (epidermal growth factor). The EGR1 gene expression is activated during this treatment. Thus, by stably transfecting PC12 cells with a construct containing an EGR promoter linked to SEAP reporter, activation of PC12 cells by polypeptide of the present invention can be assessed.

The EGR/SEAP reporter construct can be assembled by the following protocol. The EGR-1 promoter sequence (-633 to +1)(Sakamoto K et al., Oncogene 6:867-871 (1991)) can be PCR amplified from human genomic DNA using the following primers:

5' GCGCTCGAGGGATGACAGCGATAGAACCCCGG -3' (SEQ ID NO: 1690)

5' GCGAAGCTTCGCGACTCCCCGGATCCGCCTC-3' (SEQ ID NO: 1691)

Using the GAS:SEAP/Neo vector produced in Example 32, EGR1 amplified product can then be inserted into this vector. Linearize the GAS:SEAP/Neo vector using restriction enzymes XhoI/HindIII, removing the GAS/SV40 stuffer. Restrict the EGR1 amplified product with these same enzymes. Ligate the vector and the EGR1 promoter.

To prepare 96 well-plates for cell culture, two mls of a coating solution (1:30 dilution of collagen type I (Upstate Biotech Inc. Cat#08-115) in 30% ethanol (filter

sterilized)) is added per one 10 cm plate or 50 ml per well of the 96-well plate, and allowed to air dry for 2 hr.

PC12 cells are routinely grown in RPMI-1640 medium (Bio Whittaker) containing 10% horse serum (JRH BIOSCIENCES, Cat. # 12449-78P), 5% heat-inactivated fetal bovine serum (FBS) supplemented with 100 units/ml penicillin and 100 ug/ml streptomycin on a precoated 10 cm tissue culture dish. One to four split is done every three to four days. Cells are removed from the plates by scraping and resuspended with pipetting up and down for more than 15 times.

Transfect the EGR/SEAP/Neo construct into PC12 using the Lipofectamine protocol described in Example 31. EGR-SEAP/PC12 stable cells are obtained by growing the cells in 300 ug/ml G418. The G418-free medium is used for routine growth but every one to two months, the cells should be re-grown in 300 ug/ml G418 for couple of passages.

To assay for neuronal activity, a 10 cm plate with cells around 70 to 80% confluent is screened by removing the old medium. Wash the cells once with PBS (Phosphate buffered saline). Then starve the cells in low serum medium (RPMI-1640 containing 1% horse serum and 0.5% FBS with antibiotics) overnight.

The next morning, remove the medium and wash the cells with PBS. Scrape off the cells from the plate, suspend the cells well in 2 ml low serum medium. Count the cell number and add more low serum medium to reach final cell density as 5×10^5 cells/ml.

Add 200 ul of the cell suspension to each well of 96-well plate (equivalent to 1×10^5 cells/well). Add 50 ul supernatant produced by Example 31, 37 degree C for 48 to 72 hr. As a positive control, a growth factor known to activate PC12 cells through EGR can be used, such as 50 ng/ul of Neuronal Growth Factor (NGF). Over fifty-fold induction of SEAP is typically seen in the positive control wells. SEAP assay the supernatant according to Example 37.

Example 36: High-Throughput Screening Assay for T-cell Activity

NF-KB (Nuclear Factor KB) is a transcription factor activated by a wide variety of agents including the inflammatory cytokines IL-1 and TNF, CD30 and CD40, lymphotoxin-alpha and lymphotoxin-beta, by exposure to LPS or thrombin, and by expression of certain viral gene products. As a transcription factor, NF-KB
5 regulates the expression of genes involved in immune cell activation, control of apoptosis (NF- KB appears to shield cells from apoptosis), B and T-cell development, anti-viral and antimicrobial responses, and multiple stress responses.

In non-stimulated conditions, NF- KB is retained in the cytoplasm with I-KB (Inhibitor KB). However, upon stimulation, I- KB is phosphorylated and degraded,
10 causing NF- KB to shuttle to the nucleus, thereby activating transcription of target genes. Target genes activated by NF- KB include IL-2, IL-6, GM-CSF, ICAM-1 and class I MHC.

Due to its central role and ability to respond to a range of stimuli, reporter constructs utilizing the NF-KB promoter element are used to screen the supernatants
15 produced in Example 31. Activators or inhibitors of NF-KB would be useful in treating, preventing, and/or diagnosing diseases. For example, inhibitors of NF-KB could be used to treat those diseases related to the acute or chronic activation of NF-KB, such as rheumatoid arthritis.

To construct a vector containing the NF-KB promoter element, a PCR based
20 strategy is employed. The upstream primer contains four tandem copies of the NF-KB binding site (GGGGACTTTCCC) (SEQ ID NO:1692), 18 bp of sequence complementary to the 5' end of the SV40 early promoter sequence, and is flanked with an XhoI site:

5':GCGGCCTCGAGGGGACTTTCCCGGGGACTTTCCGGGGACTTTCCGGGAC
25 TTTCCATCCTGCCATCTCAATTAG:3' (SEQ ID NO:1693)

The downstream primer is complementary to the 3' end of the SV40 promoter and is flanked with a Hind III site:

5':GCGGCAAGCTTTTTGCAAAGCCTAGGC:3' (SEQ ID NO:1688)

PCR amplification is performed using the SV40 promoter template present in
30 the pB-gal:promoter plasmid obtained from Clontech. The resulting PCR fragment is

digested with XhoI and Hind III and subcloned into BLSK2-. (Stratagene) Sequencing with the T7 and T3 primers confirms the insert contains the following sequence:

5':CTCGAGGGGACTTTCCCGGGGACTTTCCGGGGACTTTCCGGGACTTTCC
5 ATCTGCCATCTCAATTAGTCAGCAACCATAGTCCCGCCCCTAACTCCGCCC
ATCCCGCCCCTAACTCCGCCCAGTTCCGCCCATTCTCCGCCCCATGGCTGA
CTAATTTTTTTTTATTTATGCAGAGGCCGAGGCCGCCTCGGCCTCTGAGCTA
TTCCAGAAGTAGTGAGGAGGCTTTTTTGGAGGCCTAGGCTTTTGCAAAA
GCTT:3' (SEQ ID NO:1694)

10 Next, replace the SV40 minimal promoter element present in the pSEAP2-promoter plasmid (Clontech) with this NF-KB/SV40 fragment using XhoI and HindIII. However, this vector does not contain a neomycin resistance gene, and therefore, is not preferred for mammalian expression systems.

15 In order to generate stable mammalian cell lines, the NF-KB/SV40/SEAP cassette is removed from the above NF-KB/SEAP vector using restriction enzymes Sall and NotI, and inserted into a vector containing neomycin resistance. Particularly, the NF-KB/SV40/SEAP cassette was inserted into pGFP-1 (Clontech), replacing the GFP gene, after restricting pGFP-1 with Sall and NotI.

20 Once NF-KB/SV40/SEAP/Neo vector is created, stable Jurkat T-cells are created and maintained according to the protocol described in Example 33. Similarly, the method for assaying supernatants with these stable Jurkat T-cells is also described in Example 33. As a positive control, exogenous TNF alpha (0.1,1, 10 ng) is added to wells H9, H10, and H11, with a 5-10 fold activation typically observed.

25 *Example 37: Assay for SEAP Activity*

As a reporter molecule for the assays described in Examples 33-36, SEAP activity is assayed using the Tropix Phospho-light Kit (Cat. BP-400) according to the following general procedure. The Tropix Phospho-light Kit supplies the Dilution,
30 Assay, and Reaction Buffers used below.

Prime a dispenser with the 2.5x Dilution Buffer and dispense 15 ul of 2.5x dilution buffer into Optiplates containing 35 ul of a supernatant. Seal the plates with a plastic sealer and incubate at 65 degree C for 30 min. Separate the Optiplates to avoid uneven heating.

- 5 Cool the samples to room temperature for 15 minutes. Empty the dispenser and prime with the Assay Buffer. Add 50 ml Assay Buffer and incubate at room temperature 5 min. Empty the dispenser and prime with the Reaction Buffer (see the table below).. Add 50 ul Reaction Buffer and incubate at room temperature for 20 minutes. Since the intensity of the chemiluminescent signal is time dependent, and it takes about 10 minutes to read 5 plates on luminometer, one should treat 5 plates at each time and start the second set 10 minutes later.

Read the relative light unit in the luminometer. Set H12 as blank, and print the results. An increase in chemiluminescence indicates reporter activity.

15 Reaction Buffer Formulation:

# of plates	Rxn buffer diluent (ml)	CSPD (ml)
10	60	3
11	65	3.25
12	70	3.5
13	75	3.75
14	80	4
15	85	4.25
16	90	4.5
17	95	4.75
18	100	5
19	105	5.25
20	110	5.5
21	115	5.75
22	120	6

521

23	125	6.25
24	130	6.5
25	135	6.75
26	140	7
27	145	7.25
28	150	7.5
29	155	7.75
30	160	8
31	165	8.25
32	170	8.5
33	175	8.75
34	180	9
35	185	9.25
36	190	9.5
37	195	9.75
38	200	10
39	205	10.25
40	210	10.5
41	215	10.75
42	220	11
43	225	11.25
44	230	11.5
45	235	11.75
46	240	12
47	245	12.25
48	250	12.5
49	255	12.75
50	260	13

Example 38: High-Throughput Screening Assay Identifying Changes in Small

Molecule Concentration and Membrane Permeability

Binding of a ligand to a receptor is known to alter intracellular levels of small molecules. such as calcium, potassium, sodium, and pH, as well as alter membrane potential. These alterations can be measured in an assay to identify supernatants which bind to receptors of a particular cell. Although the following protocol describes an assay for calcium, this protocol can easily be modified to detect changes in potassium, sodium, pH, membrane potential, or any other small molecule which is detectable by a fluorescent probe.

The following assay uses Fluorometric Imaging Plate Reader ("FLIPR") to measure changes in fluorescent molecules (Molecular Probes) that bind small molecules. Clearly, any fluorescent molecule detecting a small molecule can be used instead of the calcium fluorescent molecule, fluo-4 (Molecular Probes, Inc.; catalog no. F-14202), used here.

For adherent cells, seed the cells at 10,000 -20,000 cells/well in a Co-star black 96-well plate with clear bottom. The plate is incubated in a CO₂ incubator for 20 hours. The adherent cells are washed two times in Biotek washer with 200 ul of HBSS (Hank's Balanced Salt Solution) leaving 100 ul of buffer after the final wash.

A stock solution of 1 mg/ml fluo-4 is made in 10% pluronic acid DMSO. To load the cells with fluo-4, 50 ul of 12 ug/ml fluo-4 is added to each well. The plate is incubated at 37 degrees C in a CO₂ incubator for 60 min. The plate is washed four times in the Biotek washer with HBSS leaving 100 ul of buffer.

For non-adherent cells, the cells are spun down from culture media. Cells are re-suspended to $2-5 \times 10^6$ cells/ml with HBSS in a 50-ml conical tube. 4 ul of 1 mg/ml fluo-4 solution in 10% pluronic acid DMSO is added to each ml of cell suspension. The tube is then placed in a 37 degrees C water bath for 30-60 min. The cells are washed twice with HBSS, resuspended to 1×10^6 cells/ml, and dispensed into a microplate. 100 ul/well. The plate is centrifuged at 1000 rpm for 5 min. The plate is then washed once in Denley Cell Wash with 200 ul, followed by an aspiration step to 100 ul final volume.

For a non-cell based assay, each well contains a fluorescent molecule, such as fluo-4 . The supernatant is added to the well, and a change in fluorescence is detected.

To measure the fluorescence of intracellular calcium, the FLIPR is set for the following parameters: (1) System gain is 300-800 mW; (2) Exposure time is 0.4 second; (3) Camera F/stop is F/2; (4) Excitation is 488 nm; (5) Emission is 530 nm; and (6) Sample addition is 50 ul. Increased emission at 530 nm indicates an extracellular signaling event caused by the a molecule, either polypeptide of the present invention or a molecule induced by polypeptide of the present invention, which has resulted in an increase in the intracellular Ca^{++} concentration.

Example 40: High-Throughput Screening Assay Identifying Tyrosine Kinase Activity

The Protein Tyrosine Kinases (PTK) represent a diverse group of transmembrane and cytoplasmic kinases. Within the Receptor Protein Tyrosine Kinase (RPTK) group are receptors for a range of mitogenic and metabolic growth factors including the PDGF, FGF, EGF, NGF, HGF and Insulin receptor subfamilies. In addition there are a large family of RPTKs for which the corresponding ligand is unknown. Ligands for RPTKs include mainly secreted small proteins, but also membrane-bound and extracellular matrix proteins.

Activation of RPTK by ligands involves ligand-mediated receptor dimerization, resulting in transphosphorylation of the receptor subunits and activation of the cytoplasmic tyrosine kinases. The cytoplasmic tyrosine kinases include receptor associated tyrosine kinases of the src-family (e.g., src, yes, lck, lyn, fyn) and non-receptor linked and cytosolic protein tyrosine kinases, such as the Jak family, members of which mediate signal transduction triggered by the cytokine superfamily of receptors (e.g., the Interleukins, Interferons, GM-CSF, and Leptin).

Because of the wide range of known factors capable of stimulating tyrosine kinase activity, identifying whether polypeptide of the present invention or a molecule induced by polypeptide of the present invention is capable of activating tyrosine

kinase signal transduction pathways is of interest. Therefore, the following protocol is designed to identify such molecules capable of activating the tyrosine kinase signal transduction pathways.

Seed target cells (e.g., primary keratinocytes) at a density of approximately
5 25,000 cells per well in a 96 well Loprodyne Silent Screen Plates purchased from
Nalge Nunc (Naperville, IL). The plates are sterilized with two 30 minute rinses with
100% ethanol, rinsed with water and dried overnight. Some plates are coated for 2 hr
with 100 ml of cell culture grade type I collagen (50 mg/ml), gelatin (2%) or
polylysine (50 mg/ml), all of which can be purchased from Sigma Chemicals (St.
10 Louis, MO) or 10% Matrigel purchased from Becton Dickinson (Bedford, MA), or
calf serum, rinsed with PBS and stored at 4 degree C. Cell growth on these plates is
assayed by seeding 5,000 cells/well in growth medium and indirect quantitation of
cell number through use of alamarBlue as described by the manufacturer Alamar
Biosciences, Inc. (Sacramento, CA) after 48 hr. Falcon plate covers #3071 from
15 Becton Dickinson (Bedford, MA) are used to cover the Loprodyne Silent Screen
Plates. Falcon Microtest III cell culture plates can also be used in some proliferation
experiments.

To prepare extracts, A431 cells are seeded onto the nylon membranes of
Loprodyne plates (20,000/200ml/well) and cultured overnight in complete medium.
20 Cells are quiesced by incubation in serum-free basal medium for 24 hr. After 5-20
minutes treatment with EGF (60ng/ml) or 50 ul of the supernatant produced in
Example 31, the medium was removed and 100 ml of extraction buffer ((20 mM
HEPES pH 7.5, 0.15 M NaCl, 1% Triton X-100, 0.1% SDS, 2 mM Na₃VO₄, 2 mM
Na₄P₂O₇ and a cocktail of protease inhibitors (# 1836170) obtained from
25 Boehringer Mannheim (Indianapolis, IN) is added to each well and the plate is
shaken on a rotating shaker for 5 minutes at 4°C. The plate is then placed in a
vacuum transfer manifold and the extract filtered through the 0.45 mm membrane
bottoms of each well using house vacuum. Extracts are collected in a 96-well
catch/assay plate in the bottom of the vacuum manifold and immediately placed on
30 ice. To obtain extracts clarified by centrifugation, the content of each well, after

detergent solubilization for 5 minutes, is removed and centrifuged for 15 minutes at 4 degree C at 16,000 x g.

Test the filtered extracts for levels of tyrosine kinase activity. Although many methods of detecting tyrosine kinase activity are known, one method is described here.

Generally, the tyrosine kinase activity of a supernatant is evaluated by determining its ability to phosphorylate a tyrosine residue on a specific substrate (a biotinylated peptide). Biotinylated peptides that can be used for this purpose include PSK1 (corresponding to amino acids 6-20 of the cell division kinase cdc2-p34) and PSK2 (corresponding to amino acids 1-17 of gastrin). Both peptides are substrates for a range of tyrosine kinases and are available from Boehringer Mannheim.

The tyrosine kinase reaction is set up by adding the following components in order. First, add 10ul of 5uM Biotinylated Peptide, then 10ul ATP/Mg₂⁺ (5mM ATP/50mM MgCl₂), then 10ul of 5x Assay Buffer (40mM imidazole hydrochloride, pH7.3, 40 mM beta-glycerophosphate, 1mM EGTA, 100mM MgCl₂, 5 mM MnCl₂, 0.5 mg/ml BSA), then 5ul of Sodium Vanadate(1mM), and then 5ul of water. Mix the components gently and preincubate the reaction mix at 30 degree C for 2 min. Initial the reaction by adding 10ul of the control enzyme or the filtered supernatant.

The tyrosine kinase assay reaction is then terminated by adding 10 ul of 120mM EDTA and place the reactions on ice.

Tyrosine kinase activity is determined by transferring 50 ul aliquot of reaction mixture to a microtiter plate (MTP) module and incubating at 37 degree C for 20 min. This allows the streptavidin coated 96 well plate to associate with the biotinylated peptide. Wash the MTP module with 300ul/well of PBS four times. Next add 75 ul of anti-phosphotyrosine antibody conjugated to horse radish peroxidase(anti-P-Tyr-POD(0.5u/ml)) to each well and incubate at 37 degree C for one hour. Wash the well as above.

Next add 100ul of peroxidase substrate solution (Boehringer Mannheim) and incubate at room temperature for at least 5 mins (up to 30 min). Measure the absorbance of the sample at 405 nm by using ELISA reader. The level of bound

peroxidase activity is quantitated using an ELISA reader and reflects the level of tyrosine kinase activity.

Example 41: High-Throughput Screening Assay Identifying Phosphorylation Activity

5

As a potential alternative and/or compliment to the assay of protein tyrosine kinase activity described in Example 40, an assay which detects activation (phosphorylation) of major intracellular signal transduction intermediates can also be used. For example, as described below one particular assay can detect tyrosine phosphorylation of the Erk-1 and Erk-2 kinases. However, phosphorylation of other molecules, such as Raf, JNK, p38 MAP, Map kinase kinase (MEK), MEK kinase, Src, Muscle specific kinase (MuSK), IRAK, Tec, and Janus, as well as any other phosphoserine, phosphotyrosine, or phosphothreonine molecule, can be detected by substituting these molecules for Erk-1 or Erk-2 in the following assay.

15 Specifically, assay plates are made by coating the wells of a 96-well ELISA plate with 0.1ml of protein G (1ug/ml) for 2 hr at room temp, (RT). The plates are then rinsed with PBS and blocked with 3% BSA/PBS for 1 hr at RT. The protein G plates are then treated with 2 commercial monoclonal antibodies (100ng/well) against Erk-1 and Erk-2 (1 hr at RT) (Santa Cruz Biotechnology). (To detect other
20 molecules, this step can easily be modified by substituting a monoclonal antibody detecting any of the above described molecules.) After 3-5 rinses with PBS, the plates are stored at 4 degree C until use.

A431 cells are seeded at 20,000/well in a 96-well Loprodyne filterplate and cultured overnight in growth medium. The cells are then starved for 48 hr in basal
25 medium (DMEM) and then treated with EGF (6ng/well) or 50 ul of the supernatants obtained in Example 31 for 5-20 minutes. The cells are then solubilized and extracts filtered directly into the assay plate.

After incubation with the extract for 1 hr at RT, the wells are again rinsed. As a positive control, a commercial preparation of MAP kinase (10ng/well) is used in
30 place of A431 extract. Plates are then treated with a commercial polyclonal (rabbit)

antibody (1 µg/ml) which specifically recognizes the phosphorylated epitope of the Erk-1 and Erk-2 kinases (1 hr at RT). This antibody is biotinylated by standard procedures. The bound polyclonal antibody is then quantitated by successive incubations with Europium-streptavidin and Europium fluorescence enhancing reagent in the Wallac DELFIA instrument (time-resolved fluorescence). An increased fluorescent signal over background indicates a phosphorylation by polypeptide of the present invention or a molecule induced by polypeptide of the present invention.

Example 42: Assay for the Stimulation of Bone Marrow CD34+ Cell Proliferation

10

This assay is based on the ability of human CD34+ to proliferate in the presence of hematopoietic growth factors and evaluates the ability of isolated polypeptides expressed in mammalian cells to stimulate proliferation of CD34+ cells.

It has been previously shown that most mature precursors will respond to only a single signal. More immature precursors require at least two signals to respond. Therefore, to test the effect of polypeptides on hematopoietic activity of a wide range of progenitor cells, the assay contains a given polypeptide in the presence or absence of other hematopoietic growth factors. Isolated cells are cultured for 5 days in the presence of Stem Cell Factor (SCF) in combination with tested sample. SCF alone has a very limited effect on the proliferation of bone marrow (BM) cells, acting in such conditions only as a "survival" factor. However, combined with any factor exhibiting stimulatory effect on these cells (e.g., IL-3), SCF will cause a synergistic effect. Therefore, if the tested polypeptide has a stimulatory effect on a hematopoietic progenitors, such activity can be easily detected. Since normal BM cells have a low level of cycling cells, it is likely that any inhibitory effect of a given polypeptide, or agonists or antagonists thereof, might not be detected. Accordingly, assays for an inhibitory effect on progenitors is preferably tested in cells that are first subjected to *in vitro* stimulation with SCF+IL+3, and then contacted with the compound that is being evaluated for inhibition of such induced proliferation.

30

Briefly, CD34+ cells are isolated using methods known in the art. The cells

are thawed and resuspended in medium (QBSF 60 serum-free medium with 1% L-glutamine (500ml) Quality Biological, Inc., Gaithersburg, MD Cat# 160-204-101). After several gentle centrifugation steps at 200 x g, cells are allowed to rest for one hour. The cell count is adjusted to 2.5×10^5 cells/ml. During this time, 100 μ l of
5 sterile water is added to the peripheral wells of a 96-well plate. The cytokines that can be tested with a given polypeptide in this assay is rhSCF (R&D Systems, Minneapolis, MN, Cat# 255-SC) at 50 ng/ml alone and in combination with rhSCF and rhIL-3 (R&D Systems, Minneapolis, MN, Cat# 203-ML) at 30 ng/ml. After one hour, 10 μ l of prepared cytokines, 50 μ l of the supernatants prepared in Example 31
10 (supernatants at 1:2 dilution = 50 μ l) and 20 μ l of diluted cells are added to the media which is already present in the wells to allow for a final total volume of 100 μ l. The plates are then placed in a 37°C/5% CO₂ incubator for five days.

Eighteen hours before the assay is harvested, 0.5 μ Ci/well of [3H] Thymidine is added in a 10 μ l volume to each well to determine the proliferation rate. The
15 experiment is terminated by harvesting the cells from each 96-well plate to a filtermat using the Tomtec Harvester 96. After harvesting, the filtermats are dried, trimmed and placed into OmniFilter assemblies consisting of one OmniFilter plate and one OmniFilter Tray. 60 μ l Microscint is added to each well and the plate sealed with
TopSeal-A press-on sealing film. A bar code 15 sticker is affixed to the first plate for
20 counting. The sealed plates is then loaded and the level of radioactivity determined via the Packard Top Count and the printed data collected for analysis. The level of radioactivity reflects the amount of cell proliferation.

The studies described in this example test the activity of a given polypeptide to stimulate bone marrow CD34+ cell proliferation. One skilled in the art could
25 easily modify the exemplified studies to test the activity of polynucleotides (e.g., gene therapy), antibodies, agonists, and/or antagonists and fragments and variants thereof. As a nonlimiting example, potential antagonists tested in this assay would be expected to inhibit cell proliferation in the presence of cytokines and/or to increase the inhibition of cell proliferation in the presence of cytokines and a given polypeptide.
30 In contrast, potential agonists tested in this assay would be expected to enhance cell

proliferation and/or to decrease the inhibition of cell proliferation in the presence of cytokines and a given polypeptide.

The ability of a gene to stimulate the proliferation of bone marrow CD34+ cells indicates that polynucleotides and polypeptides corresponding to the gene are useful for the diagnosis and treatment of disorders affecting the immune system and hematopoiesis. Representative uses are described in the "Immune Activity" and "Infectious Disease" sections above, and elsewhere herein.

Example 43: Assay for Extracellular Matrix Enhanced Cell Response (EMECCR)

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The objective of the Extracellular Matrix Enhanced Cell Response (EMECCR) assay is to identify gene products (e.g., isolated polypeptides) that act on the hematopoietic stem cells in the context of the extracellular matrix (ECM) induced signal.

15

Cells respond to the regulatory factors in the context of signal(s) received from the surrounding microenvironment. For example, fibroblasts, and endothelial and epithelial stem cells fail to replicate in the absence of signals from the ECM. Hematopoietic stem cells can undergo self-renewal in the bone marrow, but not in *in vitro* suspension culture. The ability of stem cells to undergo self-renewal *in vitro* is dependent upon their interaction with the stromal cells and the ECM protein fibronectin (fn). Adhesion of cells to fn is mediated by the $\alpha_5\beta_1$ and $\alpha_4\beta_1$ integrin receptors, which are expressed by human and mouse hematopoietic stem cells. The factor(s) which integrate with the ECM environment and responsible for stimulating stem cell self-renewal has not yet been identified. Discovery of such factors should be of great interest in gene therapy and bone marrow transplant applications

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25

Briefly, polystyrene, non tissue culture treated, 96-well plates are coated with fn fragment at a coating concentration of $0.2 \mu\text{g}/\text{cm}^2$. Mouse bone marrow cells are plated (1,000 cells/well) in 0.2 ml of serum-free medium. Cells cultured in the presence of IL-3 (5 ng/ml) + SCF (50 ng/ml) would serve as the positive control,

conditions under which little self-renewal but pronounced differentiation of the stem cells is to be expected. Gene products of the invention (e.g., including, but not limited to, polynucleotides and polypeptides of the present invention, and supernatants produced in Example 31), are tested with appropriate negative controls in the presence and absence of SCF(5.0 ng/ml), where test factor supernates represent 10% of the total assay volume. The plated cells are then allowed to grow by incubating in a low oxygen environment (5% CO₂, 7% O₂, and 88% N₂) tissue culture incubator for 7 days. The number of proliferating cells within the wells is then quantitated by measuring thymidine incorporation into cellular DNA. Verification of the positive hits in the assay will require phenotypic characterization of the cells, which can be accomplished by scaling up of the culture system and using appropriate antibody reagents against cell surface antigens and FACScan.

One skilled in the art could easily modify the exemplified studies to test the activity of polynucleotides (e.g., gene therapy), antibodies, agonists, and/or antagonists and fragments and variants thereof.

If a particular polypeptide of the present invention is found to be a stimulator of hematopoietic progenitors, polynucleotides and polypeptides corresponding to the gene encoding said polypeptide may be useful for the diagnosis and treatment of disorders affecting the immune system and hematopoiesis. Representative uses are described in the "Immune Activity" and "Infectious Disease" sections above, and elsewhere herein. The gene product may also be useful in the expansion of stem cells and committed progenitors of various blood lineages, and in the differentiation and/or proliferation of various cell types.

Additionally, the polynucleotides and/or polypeptides of the gene of interest and/or agonists and/or antagonists thereof, may also be employed to inhibit the proliferation and differentiation of hematopoietic cells and therefore may be employed to protect bone marrow stem cells from chemotherapeutic agents during chemotherapy. This antiproliferative effect may allow administration of higher doses of chemotherapeutic agents and, therefore, more effective chemotherapeutic treatment.

Moreover, polynucleotides and polypeptides corresponding to the gene of interest may also be useful for the treatment and diagnosis of hematopoietic related disorders such as, for example, anemia, pancytopenia, leukopenia, thrombocytopenia or leukemia since stromal cells are important in the production of cells of hematopoietic lineages. The uses include bone marrow cell ex-vivo culture, bone marrow transplantation, bone marrow reconstitution, radiotherapy or chemotherapy of neoplasia.

Example 44: Human Dermal Fibroblast and Aortic Smooth Muscle Cell Proliferation

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The polypeptide of interest is added to cultures of normal human dermal fibroblasts (NHDF) and human aortic smooth muscle cells (AoSMC) and two co-assays are performed with each sample. The first assay examines the effect of the polypeptide of interest on the proliferation of normal human dermal fibroblasts (NHDF) or aortic smooth muscle cells (AoSMC). Aberrant growth of fibroblasts or smooth muscle cells is a part of several pathological processes, including fibrosis, and restenosis. The second assay examines IL6 production by both NHDF and SMC. IL6 production is an indication of functional activation. Activated cells will have increased production of a number of cytokines and other factors, which can result in a proinflammatory or immunomodulatory outcome. Assays are run with and without co-TNF α stimulation, in order to check for costimulatory or inhibitory activity.

Briefly, on day 1, 96-well black plates are set up with 1000 cells/well (NHDF) or 2000 cells/well (AoSMC) in 100 μ l culture media. NHDF culture media contains: Clonetics FB basal media, 1mg/ml hFGF, 5mg/ml insulin, 50mg/ml gentamycin, 2%FBS, while AoSMC culture media contains Clonetics SM basal media, 0.5 μ g/ml hEGF, 5mg/ml insulin, 1 μ g/ml hFGF, 50mg/ml gentamycin, 50 μ g/ml Amphotericin B, 5%FBS. After incubation at 37°C for at least 4-5 hours, culture media is aspirated and replaced with growth arrest media. Growth arrest media for NHDF contains fibroblast basal media, 50mg/ml gentamycin, 2% FBS, while growth arrest media for AoSMC contains SM basal media, 50mg/ml gentamycin, 50 μ g/ml Amphotericin B,

30

0.4% FBS. Incubate at 37°C until day 2.

On day 2, serial dilutions and templates of the polypeptide of interest are designed such that they always include media controls and known-protein controls. For both stimulation and inhibition experiments, proteins are diluted in growth arrest
5 media. For inhibition experiments, TNFa is added to a final concentration of 2ng/ml (NHDF) or 5ng/ml (AoSMC). Add 1/3 vol media containing controls or polypeptides of the present invention and incubate at 37°C/5% CO₂ until day 5.

Transfer 60µl from each well to another labeled 96-well plate, cover with a plate-sealer, and store at 4°C until Day 6 (for IL6 ELISA). To the remaining 100 µl in
10 the cell culture plate, aseptically add Alamar Blue in an amount equal to 10% of the culture volume (10µl). Return plates to incubator for 3 to 4 hours. Then measure fluorescence with excitation at 530nm and emission at 590nm using the CytoFluor. This yields the growth stimulation/inhibition data.

On day 5, the IL6 ELISA is performed by coating a 96 well plate with 50-100
15 µl/well of Anti-Human IL6 Monoclonal antibody diluted in PBS, pH 7.4, incubate ON at room temperature.

On day 6, empty the plates into the sink and blot on paper towels. Prepare Assay Buffer containing PBS with 4% BSA. Block the plates with 200 µl/well of Pierce Super Block blocking buffer in PBS for 1-2 hr and then wash plates with wash
20 buffer (PBS, 0.05% Tween-20). Blot plates on paper towels. Then add 50 µl/well of diluted Anti-Human IL-6 Monoclonal, Biotin-labeled antibody at 0.50 mg/ml. Make dilutions of IL-6 stock in media (30, 10, 3, 1, 0.3, 0 ng/ml). Add duplicate samples to top row of plate. Cover the plates and incubate for 2 hours at RT on shaker. Plates are washed with wash buffer and blotted on paper towels. Dilute EU-labeled Streptavidin
25 1:1000 in Assay buffer, and add 100 µl/well. Cover the plate and incubate 1 h at RT. Plates are again washed with wash buffer and blotted on paper towels. Add 100 µl/well of Enhancement Solution and shake for 5 minutes. Read the plate on the Wallac DELFIA Fluorometer. Readings from triplicate samples in each assay are tabulated and averaged.

30 A positive result in this assay suggests AoSMC cell proliferation and that the

polypeptide of the present invention may be involved in dermal fibroblast proliferation and/or smooth muscle cell proliferation. A positive result also suggests many potential uses of polypeptides, polynucleotides, agonists and/or antagonists of the polynucleotide/polypeptide of the present invention which gives a positive result.

5 For example, inflammation and immune responses, wound healing, and angiogenesis, as detailed throughout this specification. Particularly, polypeptides of the present invention and polynucleotides of the present invention may be used in wound healing and dermal regeneration, as well as the promotion of vasculogenesis, both of the blood vessels and lymphatics. The growth of vessels can be used in the treatment of,
10 for example, cardiovascular diseases. Additionally, antagonists of polypeptides and polynucleotides of the invention may be useful in treating diseases, disorders, and/or conditions which involve angiogenesis by acting as an anti-vascular (e.g., anti-angiogenesis). These diseases, disorders, and/or conditions are known in the art and/or are described herein, such as, for example, malignancies, solid tumors, benign
15 tumors, for example hemangiomas, acoustic neuromas, neurofibromas, trachomas, and pyogenic granulomas; arteriosclerotic plaques; ocular angiogenic diseases, for example, diabetic retinopathy, retinopathy of prematurity, macular degeneration, corneal graft rejection, neovascular glaucoma, retrolental fibroplasia, rubeosis, retinoblastoma, uveitis and Pterygia (abnormal blood vessel growth) of the eye;
20 rheumatoid arthritis; psoriasis; delayed wound healing; endometriosis; vasculogenesis; granulations; hypertrophic scars (keloids); nonunion fractures; scleroderma; trachoma; vascular adhesions; myocardial angiogenesis; coronary collaterals; cerebral collaterals; arteriovenous malformations; ischemic limb angiogenesis; Osler-Webber Syndrome; plaque neovascularization; telangiectasia;
25 hemophiliac joints; angiofibroma; fibromuscular dysplasia; wound granulation; Crohn's disease; and atherosclerosis. Moreover, antagonists of polypeptides and polynucleotides of the invention may be useful in treating anti-hyperproliferative diseases and/or anti-inflammatory known in the art and/or described herein.

One skilled in the art could easily modify the exemplified studies to test the
30 activity of polynucleotides (e.g., gene therapy), antibodies, agonists, and/or

antagonists and fragments and variants thereof.

Example 45: Cellular Adhesion Molecule (CAM) Expression on Endothelial Cells

5

The recruitment of lymphocytes to areas of inflammation and angiogenesis involves specific receptor-ligand interactions between cell surface adhesion molecules (CAMs) on lymphocytes and the vascular endothelium. The adhesion process, in both normal and pathological settings, follows a multi-step cascade that involves
10 intercellular adhesion molecule-1 (ICAM-1), vascular cell adhesion molecule-1 (VCAM-1), and endothelial leukocyte adhesion molecule-1 (E-selectin) expression on endothelial cells (EC). The expression of these molecules and others on the vascular endothelium determines the efficiency with which leukocytes may adhere to the local vasculature and extravasate into the local tissue during the development of an
15 inflammatory response. The local concentration of cytokines and growth factor participate in the modulation of the expression of these CAMs.

Briefly, endothelial cells (e.g., Human Umbilical Vein Endothelial cells (HUVECs)) are grown in a standard 96 well plate to confluence, growth medium is removed from the cells and replaced with 100 μ l of 199 Medium (10% fetal bovine
20 serum (FBS)). Samples for testing and positive or negative controls are added to the plate in triplicate (in 10 μ l volumes). Plates are then incubated at 37°C for either 5 h (selectin and integrin expression) or 24 h (integrin expression only). Plates are aspirated to remove medium and 100 μ l of 0.1% paraformaldehyde-PBS(with Ca++ and Mg++) is added to each well. Plates are held at 4°C for 30 min. Fixative is
25 removed from the wells and wells are washed 1X with PBS(+Ca,Mg) + 0.5% BSA and drained. 10 μ l of diluted primary antibody is added to the test and control wells. Anti-ICAM-1-Biotin, Anti-VCAM-1-Biotin and Anti-E-selectin-Biotin are used at a concentration of 10 μ g/ml (1:10 dilution of 0.1 mg/ml stock antibody). Cells are incubated at 37°C for 30 min. in a humidified environment. Wells are washed three
30 times with PBS(+Ca,Mg) + 0.5% BSA. 20 μ l of diluted ExtrAvidin-Alkaline

Phosphatase (1:5,000 dilution, referred to herein as the working dilution) are added to each well and incubated at 37°C for 30 min. Wells are washed three times with PBS(+Ca,Mg)+0.5% BSA. Dissolve 1 tablet of p-Nitrophenol Phosphate pNPP per 5 ml of glycine buffer (pH 10.4). 100 µl of pNPP substrate in glycine buffer is added to each test well. Standard wells in triplicate are prepared from the working dilution of the ExtrAvidin-Alkaline Phosphatase in glycine buffer: 1:5,000 (10^0) > $10^{-0.5}$ > 10^{-1} > $10^{-1.5}$. 5 µl of each dilution is added to triplicate wells and the resulting AP content in each well is 5.50 ng, 1.74 ng, 0.55 ng, 0.18 ng. 100 µl of pNPP reagent is then added to each of the standard wells. The plate is incubated at 37°C for 4h. A volume of 50 µl of 3M NaOH is added to all wells. The plate is read on a plate reader at 405 nm using the background subtraction option on blank wells filled with glycine buffer only. Additionally, the template is set up to indicate the concentration of AP-conjugate in each standard well [5.50 ng; 1.74 ng; 0.55 ng; 0.18 ng]. Results are indicated as amount of bound AP-conjugate in each sample.

Example 46: Alamar Blue Endothelial Cells Proliferation Assay

This assay may be used to quantitatively determine protein mediated inhibition of bFGF-induced proliferation of Bovine Lymphatic Endothelial Cells (LECs), Bovine Aortic Endothelial Cells (BAECs) or Human Microvascular Uterine Myometrial Cells (UTMECs). This assay incorporates a fluorometric growth indicator based on detection of metabolic activity. A standard Alamar Blue Proliferation Assay is prepared in EGM-2MV with 10 ng /ml of bFGF added as a source of endothelial cell stimulation. This assay may be used with a variety of endothelial cells with slight changes in growth medium and cell concentration. Dilutions of the protein batches to be tested are diluted as appropriate. Serum-free medium (GIBCO SFM) without bFGF is used as a non-stimulated control and Angiostatin or TSP-1 are included as a known inhibitory controls.

Briefly, LEC, BAECs or UTMECs are seeded in growth media at a density of 5000 to 2000 cells/well in a 96 well plate and placed at 37-C overnight. After the

overnight incubation of the cells, the growth media is removed and replaced with GIBCO EC-SFM. The cells are treated with the appropriate dilutions of the protein of interest or control protein sample(s) (prepared in SFM) in triplicate wells with additional bFGF to a concentration of 10 ng/ ml. Once the cells have been treated
5 with the samples, the plate(s) is/are placed back in the 37° C incubator for three days. After three days 10 ml of stock alamar blue (Biosource Cat# DAL1100) is added to each well and the plate(s) is/are placed back in the 37°C incubator for four hours. The plate(s) are then read at 530nm excitation and 590nm emission using the CytoFluor fluorescence reader. Direct output is recorded in relative fluorescence units.

10 Alamar blue is an oxidation-reduction indicator that both fluoresces and changes color in response to chemical reduction of growth medium resulting from cell growth. As cells grow in culture, innate metabolic activity results in a chemical reduction of the immediate surrounding environment. Reduction related to growth causes the indicator to change from oxidized (non-fluorescent blue) form to reduced
15 (fluorescent red) form. i.e. stimulated proliferation will produce a stronger signal and inhibited proliferation will produce a weaker signal and the total signal is proportional to the total number of cells as well as their metabolic activity. The background level of activity is observed with the starvation medium alone. This is compared to the output observed from the positive control samples (bFGF in growth medium) and
20 protein dilutions.

Example 47: Detection of Inhibition of a Mixed Lymphocyte Reaction

This assay can be used to detect and evaluate inhibition of a Mixed
25 Lymphocyte Reaction (MLR) by gene products (e.g., isolated polypeptides). Inhibition of a MLR may be due to a direct effect on cell proliferation and viability, modulation of costimulatory molecules on interacting cells, modulation of adhesiveness between lymphocytes and accessory cells, or modulation of cytokine production by accessory cells. Multiple cells may be targeted by these polypeptides

since the peripheral blood mononuclear fraction used in this assay includes T, B and natural killer lymphocytes, as well as monocytes and dendritic cells.

Polypeptides of interest found to inhibit the MLR may find application in diseases associated with lymphocyte and monocyte activation or proliferation. These
5 include, but are not limited to, diseases such as asthma, arthritis, diabetes, inflammatory skin conditions, psoriasis, eczema, systemic lupus erythematosus, multiple sclerosis, glomerulonephritis, inflammatory bowel disease, crohn's disease, ulcerative colitis, arteriosclerosis, cirrhosis, graft vs. host disease, host vs. graft disease, hepatitis, leukemia and lymphoma.

10 Briefly, PBMCs from human donors are purified by density gradient centrifugation using Lymphocyte Separation Medium (LSM®, density 1.0770 g/ml, Organon Teknika Corporation, West Chester, PA). PBMCs from two donors are adjusted to 2×10^6 cells/ml in RPMI-1640 (Life Technologies, Grand Island, NY) supplemented with 10% FCS and 2 mM glutamine. PBMCs from a third donor is
15 adjusted to 2×10^5 cells/ml. Fifty microliters of PBMCs from each donor is added to wells of a 96-well round bottom microtiter plate. Dilutions of test materials (50 μ l) is added in triplicate to microtiter wells. Test samples (of the protein of interest) are added for final dilution of 1:4; rhIL-2 (R&D Systems, Minneapolis, MN, catalog number 202-IL) is added to a final concentration of 1 μ g/ml; anti-CD4 mAb (R&D
20 Systems, clone 34930.11, catalog number MAB379) is added to a final concentration of 10 μ g/ml. Cells are cultured for 7-8 days at 37°C in 5% CO₂, and 1 μ C of [³H] thymidine is added to wells for the last 16 hrs of culture. Cells are harvested and thymidine incorporation determined using a Packard TopCount. Data is expressed as the mean and standard deviation of triplicate determinations.

25 Samples of the protein of interest are screened in separate experiments and compared to the negative control treatment, anti-CD4 mAb, which inhibits proliferation of lymphocytes and the positive control treatment, IL-2 (either as recombinant material or supernatant), which enhances proliferation of lymphocytes.

One skilled in the art could easily modify the exemplified studies to test the
30 activity of polynucleotides (e.g., gene therapy), antibodies, agonists, and/or

antagonists and fragments and variants thereof.

It will be clear that the invention may be practiced otherwise than as particularly described in the foregoing description and examples. Numerous modifications and variations of the present invention are possible in light of the above teachings and, therefore, are within the scope of the appended claims.

The entire disclosure of each document cited (including patents, patent applications, journal articles, abstracts, laboratory manuals, books, or other disclosures) in the Background of the Invention, Detailed Description, and Examples is hereby incorporated herein by reference. Further, the hard copy of the sequence listing submitted herewith and the corresponding computer readable form are both incorporated herein by reference in their entireties. Moreover, the hard copy of and the corresponding computer readable form of the Sequence Listing of Serial No. 60/124,270 are also incorporated herein by reference in their entireties.

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Applicant's or agent's file reference number	PA106PCT	International application	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>121</u> line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 10801 University Boulevard Manassas, Virginia 20110-2209 United States of America	
Date of deposit 20 May 1997	Accession Number 209059
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

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ATCC Deposit No. 209059**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

Page 2

ATCC Deposit No. 209059

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

542

Applicant's or agent's file reference number	PA106PCT	International application?	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

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B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 10801 University Boulevard Manassas, Virginia 20110-2209 United States of America	
Date of deposit 20 May 1997	Accession Number 209060
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

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ATCC Deposit No. 209060**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

Page 2

ATCC Deposit No. 209060

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by an applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

545

Applicant's or agent's file reference number	PA106PCT	International application N°	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>121</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 10801 University Boulevard Manassas, Virginia 20110-2209 United States of America	
Date of deposit 20 May 1997	Accession Number 209061
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

<input checked="" type="checkbox"/> For receiving Office use only This sheet was received with the international application Authorized officer PCT/Internat'l Appl Processing Div. (703) 305-3639	<input type="checkbox"/> For International Bureau use only This sheet was received by the International Bureau on: Authorized officer
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ATCC Deposit No. 209061**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

Page 2

ATCC Deposit No. 209061

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

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NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

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Applicant's or agent's file reference number	PA106PCT	International application	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>121</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution <u>American Type Culture Collection</u>	
Address of depositary institution (including postal code and country) <u>10801 University Boulevard</u> <u>Manassas, Virginia 20110-2209</u> <u>United States of America</u>	
Date of deposit <u>20 May 1997</u>	Accession Number <u>209062</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

For receiving Office use only <input checked="" type="checkbox"/> This sheet was received with the international application Authorized officer <u>Jerry McQuinn</u> <u>PCT/Internat'l Appl Processing Div.</u> <u>(703) 305-3639</u>	For International Bureau use only <input type="checkbox"/> This sheet was received by the International Bureau on: Authorized officer
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ATCC Deposit No. 209062**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

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FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

Page 2

ATCC Deposit No. 209062

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

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Applicant's or agent's file reference number	PA106PCT	International application f	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>121</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 10801 University Boulevard Manassas, Virginia 20110-2209 United States of America	
Date of deposit 20 May 1997	Accession Number 209063
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

<p>For receiving Office use only</p> <p><input checked="" type="checkbox"/> This sheet was received with the international application</p> <p>Authorized officer PCT/Internat'l Appl Processing Div. (703) 305-3639</p>	<p>For International Bureau use only</p> <p><input type="checkbox"/> This sheet was received by the International Bureau on:</p> <p>Authorized officer</p>
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ATCC Deposit No. 209063**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

Page 2**ATCC Deposit No. 209063****DENMARK**

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

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NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

554

Applicant's or agent's file reference number	PA106PCT	International application	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>121</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 10801 University Boulevard Manassas, Virginia 20110-2209 United States of America	
Date of deposit 20 May 1997	Accession Number 209064
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

<input checked="" type="checkbox"/> For receiving Office use only This sheet was received with the international application	<input type="checkbox"/> For International Bureau use only This sheet was received by the International Bureau on:
Authorized officer PCT/Internal Model Processing Div. (703) 305-3639	Authorized officer

ATCC Dep sit No. 209064

CANADA

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

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FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

Page 2

ATCC Deposit No. 209064

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

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NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

Applicant's or agent's file reference number	PA106PCT	557 International application	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>121</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution <u>American Type Culture Collection</u>	
Address of depositary institution (including postal code and country) <u>10801 University Boulevard</u> <u>Manassas, Virginia 20110-2209</u> <u>United States of America</u>	
Date of deposit <u>20 May 1997</u>	Accession Number <u>209065</u>
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

<p>For receiving Office use only</p> <p><input checked="" type="checkbox"/> This sheet was received with the international application</p> <p>Authorized officer <u>Processing Div.</u> <u>(703) 305-5639</u></p>	<p>For International Bureau use only</p> <p><input type="checkbox"/> This sheet was received by the International Bureau on:</p> <p>Authorized officer</p>
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ATCC Deposit N . 209065**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

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AUSTRALIA

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FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

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Page 2

ATCC Deposit No. 209065

DENMARK

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SWEDEN

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NETHERLANDS

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Applicant's or agent's file reference number	PA106PCT	International application	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>121</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 10801 University Boulevard Manassas, Virginia 20110-2209 United States of America	
Date of deposit 20 May 1997	Accession Number 209066
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

<input checked="" type="checkbox"/> For receiving Office use only This sheet was received with the international application Authorized officer PCT/International Processing Div. (703) 305-3639	<input type="checkbox"/> For International Bureau use only This sheet was received by the International Bureau on: Authorized officer
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ATCC Deposit No. 209066**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

Page 2**ATCC Deposit No. 209066****DENMARK**

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

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Applicant's or agent's file reference number	PA106PCT	International application number	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>121</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 10801 University Boulevard Manassas, Virginia 20110-2209 United States of America	
Date of deposit 20 May 1997	Accession Number 209067
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

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ATCC Deposit No. 209067**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

Page 2**ATCC Deposit No. 209067****DENMARK**

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

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Applicant's or agent's file reference number	PA106PCT	International application?	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>121</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 10801 University Boulevard Manassas, Virginia 20110-2209 United States of America	
Date of deposit 20 May 1997	Accession Number 209068
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

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ATCC Deposit N . 209068**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

Page 2

ATCC Dep sit No. 209068

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

569

Applicant's or agent's file reference number	PA106PCT	International application?	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>121</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 10801 University Boulevard Manassas, Virginia 20110-2209 United States of America	
Date of deposit 20 May 1997	Accession Number 209069
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

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ATCC Deposit No. 209069**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

Page 2**ATCC Deposit No. 209069****DENMARK**

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

572

Applicant's or agent's file reference number	PA106PCT	International application	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>121</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 10801 University Boulevard Manassas, Virginia 20110-2209 United States of America	
Date of deposit 12 January 1998	Accession Number 209579
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

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ATCC Deposit N . 209579**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

Page 2

ATCC Dep sit No. 209579

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

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NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

575

Applicant's or agent's file reference number	PA106PCT	International application	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>121</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 10801 University Boulevard Manassas, Virginia 20110-2209 United States of America	
Date of deposit 12 January 1998	Accession Number 209578
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

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ATCC Dep sit N . 209578**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

Page 2

ATCC Deposit No. 209578

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

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Applicant's or agent's file reference number	PA106PCT	International application	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>121</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 10801 University Boulevard Manassas, Virginia 20110-2209 United States of America	
Date of deposit 16 July 1998	Accession Number 203067
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

For receiving Office use only <input checked="" type="checkbox"/> This sheet was received with the international application Authorized officer <u>Terry McDowell</u> PCT/Internat'l Appl Processing Div. (703) 305-3639	For International Bureau use only <input type="checkbox"/> This sheet was received by the International Bureau on: Authorized officer
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ATCC Deposit No. 203067**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

Page 2

ATCC Deposit No. 203067

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

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Applicant's or agent's file reference number	PA106PCT	International application	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>121</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 10801 University Boulevard Manassas, Virginia 20110-2209 United States of America	
Date of deposit 16 July 1998	Accession Number 203068
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States) Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable) The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

<p>For receiving Office use only</p> <p><input checked="" type="checkbox"/> This sheet was received with the international application</p> <p>_____ Authorized officer PCT/International Appl Processing Div. (703) 305-3339</p>	<p>For International Bureau use only</p> <p><input type="checkbox"/> This sheet was received by the International Bureau on:</p> <p>_____ Authorized officer</p>
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ATCC Deposit No. 203068**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

Page 2

ATCC Deposit No. 203068

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

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Applicant's or agent's file reference number	PA106PCT	International application	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>121</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 10801 University Boulevard Manassas, Virginia 20110-2209 United States of America	
Date of deposit 1 February 1999	Accession Number 203609
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

<p>For receiving Office use only</p> <p><input checked="" type="checkbox"/> This sheet was received with the international application</p> <p>Jeryl McDowell Authorized officer PCT/International Appl Processing Div. (703) 305-5639</p>	<p>For International Bureau use only</p> <p><input type="checkbox"/> This sheet was received by the International Bureau on:</p> <p>Authorized officer</p>
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ATCC Deposit No. 203609**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

Page 2**ATCC Deposit No. 203609****DENMARK**

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

587

Applicant's or agent's file reference number	PA106PCT	International application	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>121</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 10801 University Boulevard Manassas, Virginia 20110-2209 United States of America	
Date of deposit 1 February 1999	Accession Number 203610
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit") 	

<input checked="" type="checkbox"/> For receiving Office use only This sheet was received with the international application Jerry McEwell Authorized officer PCT/International Appl Processing Div. (703) 205-3639	<input type="checkbox"/> For International Bureau use only This sheet was received by the International Bureau on: Authorized officer
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ATCC Deposit No. 203610**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

Page 2

ATCC Deposit No. 203610

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

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Applicant's or agent's file reference number	PA106PCT	International application	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>121</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 10801 University Boulevard Manassas, Virginia 20110-2209 United States of America	
Date of deposit 17 November 1998	Accession Number 203485
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

<input checked="" type="checkbox"/> For receiving Office use only This sheet was received with the international application	<input type="checkbox"/> For International Bureau use only This sheet was received by the International Bureau on:
Authorized officer Jared McNewell PCT/International Appl Processing Div. (703) 305-3639	Authorized officer

ATCC Deposit No. 203485**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

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FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

Page 2**ATCC Deposit No. 203485****DENMARK**

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

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NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

593

Applicant's or agent's file reference number	PA106PCT	International application	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>121</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 10801 University Boulevard Manassas, Virginia 20110-2209 United States of America	
Date of deposit 18 June 1999	Accession Number PTA-252
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

<p>For receiving Office use only</p> <p><input checked="" type="checkbox"/> This sheet was received with the international application</p> <p>Authorized officer Jeryl McDowell PCT/International Appl Processing Div. (703) 305-3839</p>	<p>For International Bureau use only</p> <p><input type="checkbox"/> This sheet was received by the International Bureau on:</p> <p>Authorized officer</p>
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ATCC Deposit No. PTA-252**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

Page 2

ATCC Deposit No. PTA-252

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

596

Applicant's or agent's file reference number	PA106PCT	International application	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>121</u> . line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 10801 University Boulevard Manassas, Virginia 20110-2209 United States of America	
Date of deposit 18 June 1999	Accession Number PTA-253
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

<p>For receiving Office use only</p> <p><input checked="" type="checkbox"/> This sheet was received with the international application</p> <p><u>Jerry McDowell</u> Authorized officer PCT/US00/05882, Appl Processing Div. (703) 305-3639</p>	<p>For International Bureau use only</p> <p><input type="checkbox"/> This sheet was received by the International Bureau on:</p> <p>Authorized officer</p>
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ATCC Deposit No. PTA-253**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

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AUSTRALIA

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FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

Page 2**ATCC Deposit No. PTA-253****DENMARK**

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

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599

Applicant's or agent's file reference number	PA106PCT	International application	UNASSIGNED
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INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13bis)

A. The indications made below relate to the microorganism referred to in the description on page <u>121</u> , line <u>N/A</u>	
B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet <input type="checkbox"/>	
Name of depositary institution American Type Culture Collection	
Address of depositary institution (including postal code and country) 10801 University Boulevard Manassas, Virginia 20110-2209 United States of America	
Date of deposit 22 December 1999	Accession Number PTA-1081
C. ADDITIONAL INDICATIONS (leave blank if not applicable) This information is continued on an additional sheet <input type="checkbox"/>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
Europe In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28 (4) EPC).	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

For receiving Office use only <input checked="" type="checkbox"/> This sheet was received with the international application Authorized officer Jani Choudhary PCT/Internat'l Appl Processing Div. (703) 305-3639	For International Bureau use only <input type="checkbox"/> This sheet was received by the International Bureau on: Authorized officer
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ATCC Deposit No. PTA-1081**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

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FINLAND

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UNITED KINGDOM

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Page 2

ATCC Deposit No. PTA-1081

DENMARK

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SWEDEN

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NETHERLANDS

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What Is Claimed Is:

1. An isolated nucleic acid molecule comprising a polynucleotide having a nucleotide sequence at least 95% identical to a sequence selected from the group
5 consisting of:

(a) a polynucleotide fragment of SEQ ID NO:X or a polynucleotide fragment of the cDNA sequence included in the related cDNA clone, which is hybridizable to SEQ ID NO:X;

(b) a polynucleotide encoding a polypeptide fragment of SEQ ID NO:Y or a
10 polypeptide fragment encoded by the cDNA sequence included in the related cDNA clone, which is hybridizable to SEQ ID NO:X;

(c) a polynucleotide encoding a polypeptide fragment of a polypeptide encoded by SEQ ID NO:X or a polypeptide fragment encoded by the cDNA sequence included in the related cDNA clone, which is hybridizable to SEQ ID NO:X;

(d) a polynucleotide encoding a polypeptide domain of SEQ ID NO:Y or a
15 polypeptide domain encoded by the cDNA sequence included in the related cDNA clone, which is hybridizable to SEQ ID NO:X;

(e) a polynucleotide encoding a polypeptide epitope of SEQ ID NO:Y or a polypeptide epitope encoded by the cDNA sequence included in the related cDNA
20 clone, which is hybridizable to SEQ ID NO:X;

(f) a polynucleotide encoding a polypeptide of SEQ ID NO:Y or the cDNA sequence included in the related cDNA clone, which is hybridizable to SEQ ID NO:X, having biological activity;

(g) a polynucleotide which is a variant of SEQ ID NO:X;

(h) a polynucleotide which is an allelic variant of SEQ ID NO:X;
25

(i) a polynucleotide which encodes a species homologue of the SEQ ID NO:Y;

(j) a polynucleotide capable of hybridizing under stringent conditions to any one of the polynucleotides specified in (a)-(i), wherein said polynucleotide does not
30 hybridize under stringent conditions to a nucleic acid molecule having a nucleotide

sequence of only A residues or of only T residues.

2. The isolated nucleic acid molecule of claim 1, wherein the polynucleotide fragment comprises a nucleotide sequence encoding a protein.

5

3. The isolated nucleic acid molecule of claim 1, wherein the polynucleotide fragment comprises a nucleotide sequence encoding the sequence identified as SEQ ID NO:Y or the polypeptide encoded by the cDNA sequence included in the related cDNA clone, which is hybridizable to SEQ ID NO:X.

10

4. The isolated nucleic acid molecule of claim 1, wherein the polynucleotide fragment comprises the entire nucleotide sequence of SEQ ID NO:X or the cDNA sequence included in the related cDNA clone, which is hybridizable to SEQ ID NO:X.

15

5. The isolated nucleic acid molecule of claim 2, wherein the nucleotide sequence comprises sequential nucleotide deletions from either the C-terminus or the N-terminus.

20

6. The isolated nucleic acid molecule of claim 3, wherein the nucleotide sequence comprises sequential nucleotide deletions from either the C-terminus or the N-terminus.

7. A recombinant vector comprising the isolated nucleic acid molecule of claim 1.

25

8. A method of making a recombinant host cell comprising the isolated nucleic acid molecule of claim 1.

30

9. A recombinant host cell produced by the method of claim 8.

10. The recombinant host cell of claim 9 comprising vector sequences.

11. An isolated polypeptide comprising an amino acid sequence at least
5 95% identical to a sequence selected from the group consisting of:

(a) a polypeptide fragment of SEQ ID NO:Y or of the sequence encoded by the cDNA included in the related cDNA clone;

(b) a polypeptide fragment of SEQ ID NO:Y or of the sequence encoded by the cDNA included in the related cDNA clone, having biological activity;

10 (c) a polypeptide domain of SEQ ID NO:Y or of the sequence encoded by the cDNA included in the related cDNA clone;

(d) a polypeptide epitope of SEQ ID NO:Y or of the sequence encoded by the cDNA included in the related cDNA clone;

15 (e) a full length protein of SEQ ID NO:Y or of the sequence encoded by the cDNA included in the related cDNA clone;

(f) a variant of SEQ ID NO:Y;

(g) an allelic variant of SEQ ID NO:Y; or

(h) a species homologue of the SEQ ID NO:Y.

20 12. The isolated polypeptide of claim 11, wherein the full length protein comprises sequential amino acid deletions from either the C-terminus or the N-terminus.

25 13. An isolated antibody that binds specifically to the isolated polypeptide of claim 11.

14. A recombinant host cell that expresses the isolated polypeptide of claim 11.

30 15. A method of making an isolated polypeptide comprising:

(a) culturing the recombinant host cell of claim 14 under conditions such that said polypeptide is expressed; and

(b) recovering said polypeptide.

5 16. The polypeptide produced by claim 15.

17. A method for preventing, treating, or ameliorating a medical condition, comprising administering to a mammalian subject a therapeutically effective amount of the polypeptide of claim 11 or the polynucleotide of claim 1.

10

18. A method of diagnosing a pathological condition or a susceptibility to a pathological condition in a subject comprising:

(a) determining the presence or absence of a mutation in the polynucleotide of claim 1; and

15 (b) diagnosing a pathological condition or a susceptibility to a pathological condition based on the presence or absence of said mutation.

19. A method of diagnosing a pathological condition or a susceptibility to a pathological condition in a subject comprising:

20 (a) determining the presence or amount of expression of the polypeptide of claim 11 in a biological sample; and

(b) diagnosing a pathological condition or a susceptibility to a pathological condition based on the presence or amount of expression of the polypeptide.

25 20. A method for identifying a binding partner to the polypeptide of claim 11 comprising:

(a) contacting the polypeptide of claim 11 with a binding partner; and

(b) determining whether the binding partner effects an activity of the polypeptide.

30

21. The gene corresponding to the cDNA sequence of SEQ ID NO:Y.

22. A method of identifying an activity in a biological assay, wherein the method comprises:

- 5 (a) expressing SEQ ID NO:X in a cell;
(b) isolating the supernatant;
(c) detecting an activity in a biological assay; and
(d) identifying the protein in the supernatant having the activity.

10 23. The product produced by the method of claim 20.

SEQUENCE LISTING

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Steve Ruben

<120> Human Cancer Associated Gene Sequences and Polypeptides

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<140> Unassigned

<141> 2000-03-08

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<210> 3

<211> 338

<212> DNA

<213> Homo sapiens

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<210> 4
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<223> n equals a,t,g, or c

<220>
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<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (793)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (807)
<223> n equals a,t,g, or c

<400> 4
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<210> 5

<211> 901
<212> DNA
<213> Homo sapiens

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<222> (838)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (846)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (870)
<223> n equals a,t,g, or c

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<210> 6
<211> 731
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (106)
<223> n equals a,t,g, or c

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cgagctgctg aaggcactgg gtgtgaacgc catgctgagg aaagtggccg tagcggctgc 180

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<210> 7

<211> 2774

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (2652)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2698)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2714)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2756)

<223> n equals a,t,g, or c

<400> 7

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<210> 8

<211> 2613

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (896)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1246)

<223> n equals a,t,g, or c

<400> 8

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<210> 9

<211> 1101

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (730)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (983)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1055)

<223> n equals a,t,g, or c

<400> 9

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<210> 10

<211> 1373

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1364)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1373)

<223> n equals a,t,g, or c

<400> 10

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<210> 11

<211> 3804

<212> DNA

<213> Homo sapiens

<400> 11

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<213> Homo sapiens

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<220>

<221> misc feature

<222> (846)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1517)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2110)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2116)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2137)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2150)

<223> n equals a,t,g, or c

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<210> 13

<211> 1117

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1102)

<223> n equals a,t,g, or c

<400> 13

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<210> 14

<211> 885
<212> DNA
<213> Homo sapiens

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<221> misc feature
<222> (869)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (884)
<223> n equals a,t,g, or c

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<210> 15
<211> 1024
<212> DNA
<213> Homo sapiens

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<222> (938)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1005)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1012)
<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1019)

<223> n equals a,t,g, or c

<400> 15

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<210> 16

<211> 545

<212> DNA

<213> Homo sapiens

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<222> (40)

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<220>

<221> misc feature

<222> (45)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (403)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (476)

<223> n equals a,t,g, or c

<220>

<221> misc feature
<222> (507)
<223> n equals a,t,g, or c

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<210> 17
<211> 623
<212> DNA
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<222> (15)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (613)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (616)
<223> n equals a,t,g, or c

<400> 17
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<210> 18
<211> 559

<212> DNA
<213> Homo sapiens

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<222> (371)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (531)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (544)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (547)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (556)
<223> n equals a,t,g, or c

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<212> DNA
<213> Homo sapiens

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<222> (55)
<223> n equals a,t,g, or c

<220>

<221> misc feature
<222> (1045)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1355)
<223> n equals a,t,g, or c

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<210> 20
<211> 1280
<212> DNA
<213> Homo sapiens

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<222> (1043)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1162)
<223> n equals a,t,g, or c

<400> 20
aattcggcac gagccttacc caggtcctgc tcggggctgg ggagaacacc aaaacaaacc 60

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tcacgaccaa aggtgtcacc tcagtctctc agatcttcca cagcccagac ctggccataa 180
gggacacctt tgtgaatgcc tctcggaccc tgtacagcag cagccccaga gtcctaagca 240
acaacagtga cgccaacttg gagctcatca acacctgggt ggccaagaac accaacaaca 300
agatcagccg gctgctagac agtctgccct ccgatacccg ccttgtcctc ctcaatgcta 360
tctacctgag tgccaagtgg aagacaacat ttgatcccaa gaaaaccaga atggaaccct 420
ttcacttcaa aaactcagtt ataaaagtgc ccatgatgaa tagcaagaag taccctgtgg 480
cccatttcat tgaccaaact ttgaaagcca aggtggggca gctgcagctc tcccacaatc 540
tgagtttggg gatcctggta ccccagaacc tgaaacatcg tcttgaagac atggaacagg 600
ctctcagccc ttctgttttc aaggccatca tggagaaact ggagatgtcc aagttccagc 660
ccactctcct aacactaccc cgcatcaaag tgacgaccag ccaggatatg ctctcaatca 720
tggagaaatt ggaattcttc gatttttctt atgaccttaa cctgtgtggg ctgacagagg 780
accagatctc tcaggtttct gcgatgcagc accagacagt gctggaactg acagagactg 840
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tgcagcagcc cttcctcttc rtgctctggg accagcagca caagtccct gtcttcatgg 960
ggcgagtata tgaccccagg gcctgagacc tgcaggatca ggttagggcg agcgctacct 1020
ctccagctc agctctcagt ttnagccctg ctgctgcctg cctggacttg gccctgcca 1080
cctcctgcct caggtgtccg ctatccacca aaagggctcc ctgagggctc gggcaaggga 1140
cctgcttcta ttagcccttc tnccatgccc tgccatgctc tccaaaccac tttttgcagc 1200
tttctctagt tcaagttcac cagactctat aaataaaaac tgacagacca tgaaaaaaa 1260
aaaaaaaaac tcaagactag                                     1280

```

<210> 21

<211> 1191

<212> DNA

<213> Homo sapiens

<400> 21

```

gcaattcctt ctggcttcct gtgacctcac gcaagaaaag gttgtgtact aaatgaatct 60
gctttaactt gctctccttc ctcggggata acaccttttt aagaaagcct gtcccttacc 120
ttgaagcaca aacatattct catttttatt ctcccaatac cttgaagggt ttcttctgca 180
catgtatttg tttgatctgc cttttgtgcg tggggtggga gttaggtagg aatcttaaag 240
tggagagcca gtttcttccc aaattactga cctaaccat ccttaacccc cagttcaagg 300
ccacctttgt gatagtgaag cttccacatg ctactcagc cccttctgct ctctcttctt 360
ctctactgtg catgtcgggt tgtacttttg ccagtttctc taaagacaca accagagtgg 420
ggtggctgtg tgtgcacaac ttcaacttta catgtggggc tgagtcccta tgtgtatat 480
ccttgtgcaa aagcacataa tgttaattgc tatagctttt aaaaaataa ttaatagttt 540
ttcataatca aattttcttg cttttttgtt ttttcaaaaa agcatacttt tattgaagaa 600
taaaccctt atatatgtac acttatttat aactatgaac gcctgaacta ggatagaaat 660
gcattgtgta tattacaaaa cataacaaaa ataatagggg tagggagggt cagatgttgg 720
tcaaaggata taaacctgca gttctatgat gaataagttc tggacatctg gaatacagca 780
tggtgactat acttagtaat actatattgt acacttgaag cttactgaaa gagttaaact 840
caagtgttct caccacacaa acccaaagg aactatgttc tcaccacaca aacccaaagg 900
gaactatgta ttaattagct tgattgtggg aaccatttca caatgtatac atttgccaaa 960
acattatgtt gtatacctgg aatatataat tttatttatc aattatacct caataaagct 1020
gaaagagggg attactaatt cccacaaaat acagatttaa caaaaacttt tattcaacaa 1080
acagtgttat gaagttgtaa attggaaaca aaagaaataa aatttcaccc acagtcttct 1140
catcaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaactcgtag g 1191

```

<210> 22

<211> 853

<212> DNA

<213> Homo sapiens

<400> 22

```
cttacacagc agcaacagcc tgctacaggg ccacagccat ctctgggagt tagttttgga 60
acgccattcg gctcaggtat tggcactggc ttgcaatcaa gtggccttagg ttcttcaaac 120
cttggaggat ttggaactag ctctgggttt ggatgcagca ccacaggggc ctccacattt 180
ggattttggaa caacaaataa accctcagga agtcttagtg caggcttttg cagctcaagt 240
acatctgggt ttaacttcag caatcctggc atcacggcat cagctgggtt gacttttggg 300
gtgtccaatc ctgcctctgc aggttttgga acaggaggac aactccttca gttgaagaaa 360
cctccagctg graacaaaag aggaaaaaga taaacatggg ttgatgtgtt gagagaatcc 420
atagcagcac cgttcattct atgagtctat ttttctaata atgcagtaat taaattgcat 480
cccaggagat ttataaagt ttgatatttt tccctactct ggratttgaa ctttcttcat 540
gtttgccata ctgaacawct tttttcttgt ggaatttaaa gtccagctgt gttttctttt 600
taatttgatt ctgagtgtaa gaaatgttct gattacatca ctgattggta atggtagtaa 660
accattaacc taaaacttac tatttaacct agtggttttg ttgatgaggt ttacattatg 720
tgaatacatg cacatttggt tcttatacag gtggtgtgaa ctctagggcc tatactagaa 780
tcaatttggt ccttgtaaaa ggccttttga attatactgc agggcatctt gtgaatatgt 840
atgtaaatat ata 853
```

<210> 23

<211> 474

<212> DNA

<213> Homo sapiens

<400> 23

```
ggcacgagct cgtccggccc gtgggtctga cggcttgagt agcgctaggg agaatccctg 60
caggtaatat ttgacttttg cttcatatta atctgagtgg aaaataaaaag ggccctcttc 120
tcctctcgct tccctgccgg gcaggcgcca tggcggaagc tcggcgacgg gcgcctgcgg 180
agaggcgatg gcagcgggcg aaggctcctc gggcccgcg ggcttgactc tgggccggag 240
cttctcgaac taccggccct tcgagcccca ggcgttgggc ctgagcccga gctggcggt 300
gacgggcttc tccggcatga agggctgagg ctgcaaggtc ccgcagaggc gctgctcaaa 360
ctcctggcgg gactgamgcg gccggacktk cggccccgct gggccggggc ctkgtkgtk 420
gccargaara agcgtcccag gaagccggcc tgccggcaag agcggggccc agcc 474
```

<210> 24

<211> 2280

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (13)

<223> n equals a,t,g, or c

<400> 24

```
ctctccccct ccnaccctc ccgetccaag attcgccgcc gccgccgccg cagccgcagg 60
agtagccgcc gccggagccg cgcgcarrcca tggccgagaa cccagcttg gagaaccacc 120
gcatcaagag cttcaagaac aaggggcgcg atgtggaaac aatgcgaaga catagaaatg 180
aagtgcaggt ggaactgcgg aagaacaaaa gagatgaaca cttattgaaa aagagaaatg 240
ttccccaaag agaaagtcta gaagattcag atgttgatgc tgattttaaa gcacaaaatg 300
```

```

taaccctaga agctatattg cagaatgcc aagtgataa cccagtggc caattgagt 360
ctgtccaggc agcaagaaaa ctgttatcca gtgacagaaa tccaccgatt gatgacttaa 420
taaaatctgg gattttacca attctagtca aatgtctaga aagggatgat aatccttcat 480
tacagtttga agctgcttgg gcattaaacta acatagcatc aggracttct gcacagactc 540
aagctgttgt gcagtctaata gcagtaacct tttttctgag acttcttcgt tcaccacatc 600
agaatgtttg tgaacaagca gtatgggctt tgggaaacat tataggatgat ggtcctcaat 660
gtagagatta tgtcatatca ctgggagttg tcaaacctct tctgtccttc atcagtcctc 720
ccatcccat cacttctcct cggaacgtca catgggtcat tgtcaatctc tgcaggaata 780
aggatcccc accgcctatg gagacagttc aggagatttt gccagcttta tgtgtcctca 840
tataccatac agatataaac attcttgtag acactgtttg ggctctgtca tacttgacag 900
atggaggtaa tgaacagata cagatgggta ttgattcagg agttgtgccc tttcttgtgc 960
cccttctgag ccatcaggaa gtcaaagttc aaacagcagc cctcagagca gttggcaaca 1020
tagtgactgg caccgacgag cagacccagg ttgttctcaa ttgtgatgtc ctgtcacact 1080
tcccaaactc cttatcacac ccaaaagaga agataaataa ggaagcagtg tggttccttt 1140
ccaacataac agcaggcaac cagcaacaag ttcaagctgt aatagatgct ggattaattc 1200
ctatgataat tcatcagctt gctaaggggg actttggaac acaaaaagaa gctgcttggg 1260
caatcagcaa cttacaata agtggcagaa aagatcaggt tgagtacct gtacagcaga 1320
atgtaatacc accgttctgt aatttactgt cagtgaaga ttctcaagt gttcaggtgg 1380
ttctagatgg tctaaaaaac attctgataa tggccggtga tgaagcaagc acaatagctg 1440
aaataataga ggaatgtgga ggtttggaga aaattgaagt ttacagcaa catgaaaatg 1500
aagacatata taaatttagc tttgaaatca tagatcagta tttctctggt gatgatattg 1560
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cagccaacct tcaaacaaaa gaatttaatt tttaaattca gttgagtgc gcatctttcc 1680
cacattcaat atgaagcacc accagatggc taccaatga taagaacaac agcaacmaaa 1740
ggctccaaaa cacacatgcc tctttgtttt gatgcttcta aagcaagcca tgtctcagtc 1800
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aaactgtttt agaactctcc ttaacaatct caactacct atttttccct gttccctgg 1920
gccacaggct gacaactgca gtctccagtt tagaataaat attccatagt ggtgacatgt 1980
cagctgcccc ctgatactcc tttggaaaat ggtgcgtgt ggatcaagac actttggat 2040
gatgcatata caagttggaa gactaaagag gtgcagtgtg atctgagcct ccatcattgt 2100
cctccacaaa catattttca tattctttat gtggaagaat agattttaaa gtacaagcca 2160
aatgattttt attggtggaa ctgacacaaa aaaagtaact taaaaacaag aaacttgg 2220
attgaataaa cagataagtt taaaaaaaaa aaaaactact tcatctacca gtaattgatg 2280

```

<210> 25

<211> 1061

<212> DNA

<213> Homo sapiens

<400> 25

```

cgacccggcc cagtgcgcag gcgcgggaaa gttgaactaa taaagtttgt acgagttcag 60
tggaggagac cgcaagttga gtggaggagg cggcgggtgg gccccggacc aggtgcctcc 120
atggcaggct ctgaagagct ggggtctcgg gaagacacgc tgagggtcct agctgccttc 180
cttaggcgtg gtgaggctgc cgggtctcct gttccaactc cacctagaag ccctgccccaa 240
gaagagccaa cagacttctt gagccgcctt cgaagatgtc ttccctgtc cctggggcgga 300
ggagcagccc cctctgagtc cctcggcctt tgctctctgc ccatccgccc ctgctatggt 360
ttagagcctg gccagctac tccagacttc tatgctttgg tggccagcg gctggaacag 420
ctggtccaag agcagctgaa atctccgccc agccagaat tacagggtcc cccatcgaca 480
gagaaggaa ccatactgga gaggtgggt gccctgctgg aggaggaggc agaagtcatt 540
aaccagaagc tggcctcgga cccgcctcg cgacaaagct ggtccgctg tcctccgact 600
ctttcgcccc cctgggtggag ctgttctgta gccgggatga cagctctcgc ccaagccgag 660

```

```

catgccccgg gccccgcct ccttccccgg agccccctgg ccgcctggcc ctagccatgg 720
agctgagccg gcgcgtggcc gggctggggg gcaccctggc cggactcagc gtggagcacg 780
tgcacagctt cacgccctgg atccaggcca cgggggctgg gagggcatcc tggctgtttc 840
acccgtggac ttgaacttgc cattggactg agctctttct cagaagctgc tacaagatga 900
cacctcatgt cccctgccctc ttcgtgtgct tttccaagtc ttctattcc actcagggt 960
gtgggggtgtt ggttgcccta cctgtttttg ccaaaaataa attgttttaa acttttctta 1020
ttaaaaacgt tacaaaaaaa aaaaaaaaaa agggggggccg c 1061

```

```

<210> 26
<211> 1572
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc feature
<222> (19)
<223> n equals a,t,g, or c

```

```

<220>
<221> misc feature
<222> (28)
<223> n equals a,t,g, or c

```

```

<220>
<221> misc feature
<222> (1491)
<223> n equals a,t,g, or c

```

```

<220>
<221> misc feature
<222> (1527)
<223> n equals a,t,g, or c

```

```

<220>
<221> misc feature
<222> (1555)
<223> n equals a,t,g, or c

```

```

<400> 26
gtttgtcagt ctcggcgng gcggcgngg tggcgggcggc ggcgatccac agtgattcgg 60
ccgccgcgcc ggggggtggg ggggctgcgc gggacttttt tttttttcag actgaccgcg 120
gggcagctgc ggacatgtcg accccggccc ggaggaggct catgcgggat ttcaagcgg 180
tacaagagga cccacctgtg ggtgtcagt gcgcaccatc tgaaaacaac atcatgcagt 240
ggaatgcagt tatatttga ccagaaggga caccttttga agatggtact tttaaactag 300
taatagaatt ttctgaagaa tatccaaata aaccaccaac tgtaggttt ttatccaaaa 360
tgtttcatcc aaatgtgtat gctgatggta gcatatgttt agatatcctt cagaatcgat 420
ggagtccaac atatgatgta tcttctatct taacatcaat tcagtctctg ctggatgaac 480
cgaatcctaa cagtccagcc aatagccagg cagcacagct ttatcaggaa aacaaacgag 540
aatatgagaa aagagtttcg gccattgttg aacaaagctg gaatgattca taatagacaa 600
ctgggtctgtt aatctttttc atcattgttg tgtataattt acctctcatt agaaaggcta 660
acaaatttta agtgccacag gttttaagga ttctgcagaa aaaaaagaaa aaagtccttc 720

```



```
agtttagaac ctacaaaagc ttgtgtatct tgattaatgt acttttttatt gcatgggtgtg 780
aactaagtta ttgctgcata aatttgtaat atatcctgtt tgtatttttt tccaagtgtg 840
taatgttggg gtggagtttt catgacagaa tatacacatt ttgtaaatct gtactttttt 900
caaatattga atgccttatt tttgaattct ttagattttt aaattggaga aaagcactta 960
aagtttttta tatatgaata ttacatgtaa agctgtttaa atacataact tcagtgaag 1020
agactttgtc acttatttcc ttatgtgtgt aggaggggtt aataagtctc tagctctcca 1080
tctattgata gtttcattta caatttcaaa agaacattct tatattttat caaggaagtc 1140
ttcaaatttg attctaaata gcgattataa tctccaactt tattttgaat gtacctctat 1200
tagtttcaat tgagtaattc tagacataac tggtttgact ctgtccaact ctgtatttag 1260
gccatttggt acagtttctt catgcattac ttactgttaa aactgtacct tttgcgattt 1320
cacagtggc acttctgcc tggagcagaga actgatgcga cttgttttgc tgcttggttag 1380
cactttaaaa aattttttga ttaatgaagg aaagtaaac cataaacatt tgccaaaaat 1440
tcatgcccc gtattaggca atggaattag gttgcattgg gtttgaggaa ngggcacatt 1500
ggggggggga atcttggggt gttaacnttt aaattatttt gggaaaattt acccntttta 1560
tgcccatggc ct 1572
```

<210> 27

<211> 2005

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1976)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1977)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1978)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1979)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1986)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1988)

<223> n equals a,t,g, or c

<400> 27

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gcggaacgct ggggtcgccma cgcgygcgca agcagcgggt tagtggtcgc gcgcccagacc 60
tccgcagtc cagccgagcc gcgacccttc cggccgtccc caccaccact cgccgccatg 120
cgctccgccc gcctagcgct gttcccgggt gtggcgctgc ttcttgccgc ggcccgcctc 180
gccgtgcct ccgacgtgct agaactcacg gacgacaact tcgagagtcg catctccgac 240
acgggctctg cgggcctcat gctcgtcgag ttcttcgcy cctgggtgtg acactgcaag 300
agacttgca ctagtatga agctgcagct accagattaa aaggaatagt cccattagca 360
aaggttgatt gcaactgcaa cactaacacc tgtaataaat atggagtcag tggatatcca 420
accctgaaga tatttagaga tgggaagaa gcaggtgctt atgatggacc taggactgct 480
gatggaattg tcagccactt gaagaagcag gcaggaccag cttcagtgcc tctcaggact 540
gaggaagaat ttaagaaatt cattagtgt aaagatgcct ctatagtagg ttttttcgat 600
gattcattca gtgaggctca ctccgagttc ctaaaagcag ccagcaactt gagggataac 660
taccgatttg cacatacgaa tgttgagtct ctggtgaacg agtatgatga taatggagag 720
ggtatcatct tatttcgtcc ttcacatctc actaacaagt ttgaggacaa gactgtggca 780
tatacagagc aaaaaatgac cagtggcaaa attaaaaagt ttatccagga aaacattttt 840
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attgcttact atgatgtgga ctatgaaaag aacgctaaaag gttccaacta ctggagaaac 960
agggtaatat tgggtggcaa gaaattcctg gatgctgggc acaaactcaa ctttgctgta 1020
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gagattcctg ttgttgctat cagaactgct aaaggagaga agtttgtcat gcaggaggag 1140
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aagagatacc tgaagtctga acctatccca gagagcaatg atgggcctgt gaaggtagtg 1260
gtagcagaga attttgatga aatagtgaat aatgaaaata aagatgtgct gattgaattt 1320
tatgccccct ggtgtggtca ytgtaagaac ctggagccca agtataaaga acttggcgag 1380
aagctcagca aagacccaaa tategtcata gccaaagatg atgccacagc caatgatgtg 1440
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ctaaatccaa agaaatatga aggtggccgt gaattaagtg attttattag ctatctacaa 1560
agagaagcta caaaccccc tgtaattcaa gaagaaaaac ccaagaaga gaagaaggca 1620
caggaggatc tctaaagcag tagccaaaca ccactttgta aaaggactct tccatcagag 1680
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cactgtttat ggaaatacca ggaccagttt atgtttgtgg ttttgggaaa aattatttgt 1860
gttgggggaa atgttggtgg ggtggggttg agttgggggt attttcta at ttttttgtta 1920
catttggaac agtgacaata aatgagacc ctttaaaaaa aaaaaaaaaa aaaaannng 1980
gggggncc cagtccatt cgccc 2005

```

<210> 28

<211> 1408

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (11)

<223> n equals a,t,g, or c

<400> 28

```

cccgcagaca ngcaattttc acctgtgagg tccctgggtg ctactacttt gsataccacg 60
ttcactgcaa ggggggcaac gtgtgggttg ctctattcaa gaacaacgag cccgtgatgt 120
acacgtacga cgagtacaaa aagggtcttc tggaccaggc atctgggagt gcagtgcctg 180
tgctcaggcc cggagaccgg tgttcctcca gatgccctca gaacaggctg caggactgta 240

```

```

tgccgggcag tatgtccact cctccttttc aggatattta ttgtatccca tgtaaaaaaca 300
aaaaaacaaa aaacaaagaa aagaaagaga ttttatagaa gaaaatgaca caccaaaaaa 360
tccaaatgaa aaacataatt gcttcaaaac acttacacag ttggaaaagt atatgtaagt 420
gaaaatttgg accattgtgt acaataaaaa actaagatgc atgtttaata ctccacacag 480
cagcctgtaa ttgcgaatga tgggatagag ttatgtatca agtactgaca cttgggttgta 540
cccactggaa tcatattagc tgttttatgt tatatgcttc cacagtaacc tgcttattca 600
gatcagtc aaatataatcag tatgaaagat catagcta atgaaagcact cactcatatt 660
gtttacttta aaatatttat aaatatgcct taaagaaata caaatgata caattacata 720
ccgtatttac ttgcttaatt tcctctgtat ttgtgtagat actttgacat ggaatatatg 780
gtggggagac ccgtagtgtt accgccccag tgggaggggg ccctgggacc ctggtaatgc 840
tttagtcaaa gggatatctc tcttgtatca gaggtgtgt cttttagtaa caggagtcct 900
cgtcagaatt gcgtgtctgt tgtctctaaa agaattgggtg aaccaatcgg ctttgtgaa 960
tttattcagt gccttctctg taccaagcac tgggtaaggc acttttgtgg agcattagac 1020
agtaaccctc aaggagctag agaaccgat gggagacatg agcggtaatt aactcacttg 1080
ttccccagag tttctatttg ttttgatttt cttttctgt gacttatttt cctattttct 1140
ttcctccatg taattttcac tatggcccaa ctaataataa cacctgggaa attacaagga 1200
aaaaaaattc ttcctcta atctttccaa atttgtggaa tatttatttg taatagcagt 1260
tatcagttat gcttatatag cattaataat tctcctcctt tgactacaca cacaaccaca 1320
gtgtggttct aatcatggag atatcagtaa ttttagtaa ctgarttttg aggacatttc 1380
tctgttttagc atgtatgcaa actggata 1408

```

<210> 29

<211> 917

<212> DNA

<213> Homo sapiens

<400> 29

```

ggcacgagcg aggggaggag ccgctggctc ccagccccgc cgcgatgagc ctcggccgcc 60
tttgccgcct actgaagccg gcgctgctct gtggggctct ggccgcgcct ggctggccg 120
ggaccatgtg cgcgtcccgg gacgactggc gctgtgcgct ccatgcacga kttttccgcc 180
aaggacatcg acgggcacat ggtaaacctg gacaagtacc ggggcttcgt gtgcatcgtc 240
accaacgtgg cctcccagtg aggcaagacc gaagtaaact aactcagct cgtcgacctg 300
cacgcccgat acgctgagtg tggtttgccg atcctggcct tcccgtgtaa ccagttcggg 360
aagcaggagc cagggagtaa cgaagagatc aaagagttcg ccgagggcta caacgtcaaa 420
ttcgaatatg tcagcaagat ctgctggaac ggggacgacg cccacccgct gtggaagtgg 480
atgaagatcc aacccaaggg caagggcacg ctgggaaatg ccatcaagtg gaacttcacc 540
aagtctctca tcgacaagaa cggctgcgtg gtgaagcgct acggacccat ggaggagccc 600
ctggtgatag agaaggacct gccccactat ttctagctcc acaagtgtgt ggccccgccc 660
gagcccctgc ccacgcccty ggagccttcc accggcactc atgacggcct gcctgcaaac 720
ctgctggtgg ggcagacccg aaaatccagc gtgcaccccg ccggaggaag gtcccatggc 780
ctgctgggct tggctcggcg cccccacccc tggctacctt gtgggaataa acagacaaat 840
tagcaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 900
aaaaaaaaa aaaaaaa 917

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<210> 30

<211> 577

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (501)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (534)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (568)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (575)

<223> n equals a,t,g, or c

<400> 30

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aattcggcac gaggtcatct ggtggaaaag gagactttaa gattgttttag ggctgggcgg 60
ggtgactcac atctgtaatc ccagcacttt gggaggccaa ggcaggcaga acacttgaag 120
gagttcaaga ccagcgtggc caacgtggtg aaccctgtct ctactaaaaa tacaaaaatt 180
gtttagctct gtttttcata atagaaatag aaaaggtaaa attgcttttc ttctgaaaag 240
aacaagtatt gttcatccaa gaagggtttt tgtgactgaa tcagcagtgc ctgccctagt 300
catagctgtg cttcagaaac ctcagcatga ttagtgttkg agcmmaacaa ggragcaaag 360
caaatwcwgt ttttgaaatt ctatctgttg cttgaactat tttgtaataa ttaaactttg 420
gatgttgaga aatcacaaact ttattggtac acttcattgc aacttgaaat tccatggggtc 480
ttaaagtggag attggaattc naatgggcgg ctttaaaaaa gtaattccca accnttaagg 540
ttaaaaccca ggaaattggg gccaatcnaa aaccnng 577
```

<210> 31

<211> 2059

<212> DNA

<213> Homo sapiens

<400> 31

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tgggagtaaa aatgtgtctt cagagactgt gaacatcacc atcactcaag gtttggcagt 60
gtcaaccatc tcatcattct ttccacctgg gtaccaagtc tctttctgct tggatgatgg 120
actccttttt gcagtggaca caggactata tttctctgtg aagacaaaca ttcgaagctc 180
aacaagagac tggaaggacc ataaatttaa atggagaaag gacctcaag acaaatgacc 240
cccattcccat gggggtaata agagcagtag cagcagcatc tctgaacatt tctctggatt 300
tgcaacccca tcatcctcag gcctctctac aagcagcagg aaacatagaa ctcagagcca 360
gatcccttat ccaactctcg acttttcctt ggtctccagt ggaagggaaa agcccatgat 420
cttcaagcag ggaagcccca gtgagtagct gcattcctag aaattgaagt ttcagrgcta 480
cacaacamt tttctgtccc aaccgttccc tcacagcaaa gcaacaatac aggctagggg 540
tgaaggagga gtgcaaaaara gtgtccccac cctcctgccc ccgcaccgt ttgccacccc 600
ttcgggaagac ccagtgtgtg gatgagtatg agtgtgcctg caactgtgtc aatccacagt 660
gagctgtccc cttgggtact tggcctcaac cgccaccaat gactgtggct gtaccacaac 720
cacctgcctt cccgacaagg tgtgtgtcca ccgaagcacc atctaccctg tgggcccagt 780
ctgggaggag ggtgcgatg tgtgcacctg caccgacatg gaggatgccg tgatgggcct 840
ccgcgtggcc cagtgtctcc agaagccctg tgaggacagc tgtcggtcgg gcttcactta 900
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cccgagagaac ccctgcctca tcaatgagtg tgtccgagtg aaggaggagg tctttataca 1080
acaaaggaac gtctcctgcc cccagctgga ggctccctgtc tgccctcgg gctttcagct 1140
gagctgtaag acctcagcgt gctgcccagg ctgtcgtgtg gagcgcgtgg aggcctgcat 1200
gctcaatggc actgtcattg ggcccgggaa gactgtgatg atcgatgtgt gcacgacctg 1260
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ctgctgcctg ccttgccctga tggccaggcc agagtgtctg cagtcctctg catgttctgc 1980
tcttgtgcc ttctgagccc acaataaagg ctgagctctt atcttgcaaa aaaaaaaaaa 2040
aaaaaaaaa aaaaaaaaaa 2059
```

<210> 32

<211> 549

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (337)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (378)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (497)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (537)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (546)

<223> n equals a,t,g, or c

<400> 32

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atggttttagc gccagggttcc ccacgaacgt gcggtgcgtg acgggcgagg gggcgccgc 120
tctagaggat ccaagcttac gtacgcgtgc atgcgacgtc atagctcttc tatagtgtca 180
cctaaattca attcactggc cgtcgtttta caacgtcgtg actgggaaaa ccctggcggt 240
acccaactta atcgccttgc agcacatccc cctttcgcca gctggcgtaa tagcgaagag 300
gcccgcaccg attcgccctt tcccaacagt tgcgcantcg gaatggcgaa tggggacgcg 360
ccctgtatgg gcgcgttnaa gcgcggcggg tgtggtggtt acgcgcagtg gaccgcgtac 420
acttgccagc gccctagcgc ccgctccttt cgctttcttc ccttcctttc tcgccacgtt 480
cgccggcttt ccccttnaag ctctaaatcg gtgggctccc tttagggtgtc ctatttngtg 540
ctttanggt 549
```

<210> 33

<211> 841

<212> DNA

<213> Homo sapiens

<400> 33

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gctttgaacc tcaacagcca gctgaacata cccaaagaca caagccaact gaagaaacat 60
atcaccttgc tctgcgatag attatccaaa ggtggccgtc tctgcctaag taccgatgca 120
gcagccccac agaccatggg catgccaggt ggttgacta caatcccaga gtcagacct 180
gaagaaagat cagtagaaca agactctaca gaactgttta ccaaccacag acatctcact 240
gcagagacac ccaggcctgt ttcacccttc caaggagtct cgggaataatt ccaagtagag 300
ttgtttggtt gagaggaaca tccccatctc aaggccgaac ctgtgtgaac ctcatgccaa 360
gcacagatat arggctggcg caggtgcttc cyaaagctya ccttcctgga gatgacatgc 420
atagaaagag ggggtgggac tttttacttc actaggagaa cttgtaacac catggggaag 480
tcagctgaaa cttgtcttgt tttgccagga aagggaagtag ttgcctttgg tcatccatct 540
gctaatagtc acagaataca gtgaaatgac atagttttgg gttagatttt ataatgcaa 600
gattcagatc caaaataatt tcatacccca ttttttcaca gaattcttat atagtaaagt 660
tatcaagttt aataaagcat ctcatgttca aataatatct tggattttat ttataattag 720
agggatttat gagtgattgc tctacattat ttcttcaaag gaaaggaaag gaattgaaga 780
ctttgctact ctctggttaag acttgaatgt gattatttta taaataaaaag aaccactatg 840
a 841
```

<210> 34

<211> 863

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (19)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (29)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (44)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (58)

<223> n equals a,t,g, or c

<400> 34

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accaaaaaag ctttggagnt ttccaaccnc cggtttgcgg ccnngttttt tagaactnag 60
tggaatcccc ccgggggcttt caaggaattc ggcacgagtt tgcttaggcg cagacgggga 120
agcggagcca acatgccagt ggcccggagc tgggtttgtc gcaaaactta tgtgaccccc 180
cggagaccct tcgagaaatc tcgtctcgac caagagctga agctgatcgg cgagtatggg 240
ctccggaaca aacgtgaggt ctggagggtc aaattttacc tggccaagat ccgcaaggcc 300
gcccgggaac tgctgacgct tgatgagaag gacccacggc gtctgttcga aggcaacgcc 360
ctgctgcggc ggctgggtccg cattgggggtg ctggatgagg gcaagatgaa gctggattac 420
atcctggggc tgaagataga ggattttctta gagagacgcc tgcagacca ggtcttcaag 480
ctgggcttgg ccaagtccat ccaccacgct cgcgtgctga tccgccagcg ccatacagg 540
gtccgcaagc aggtggtgaa catcccgtcc ttcattgtcc gcctggattc ccagaagcac 600
atcgacttct ctctgcgctc tccctacggg ggtggccgcc cgggccgcgt gaagaggaag 660
aatgccaaga agggccaggg tggggctggg gctggagacg acgaggagga ggattaagtc 720
cacctgtccc tcctgggctg ctggattgtc tcgttttctt gccaaataaa caggatcagc 780
gctttacaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 840
aaaaaaaaaa aaaaaaaaaa ttt                                     863

```

<210> 35

<211> 1230

<212> DNA

<213> Homo sapiens

<400> 35

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tgcaggaatt cggcacgagc ccagcgccgc cgccatgtcc tccgggggcta gcgcgagcgc 60
cctgcagcgc ttggtagagc agctcaagtt ggaggctggc gtggagagga tcaaggctctc 120
tcaggcagct gcagagcttc aacagtactg tatgcagaat gcctgcaagg atgccctgct 180
ggtgggtgtt ccagctggaa gtaaccctt ccgggagcct agatcctgtg ctttactctg 240
aagactctag gagagaagtt tgctgaggaa tgccttcaag cacaaagtga tgaatgactg 300
ccttcaagtc tcaagaaaac acttttccct aactttttaga gatatttcag ccctttcctg 360
tggcctggtc ctatagccaa aatcacagat attcatgagt ttctacttga gtgagaaaac 420
tgggtgaagg aatagaattt taaatagtaa taactgcttg tttttttgt gcaagtactt 480
ttatacataa gataaacaac aaccttacca ccaaacatac caaaatgcac ctctttcata 540
agtgaattac taagatttct atacctggaa tatcatgtat gtttcattta ctggatgttt 600
acatttttagg aaggaaaata gtttgtttta tttaaacaac tgaatactta taaactgttg 660
ttcctggaag ttattttatt cataaaaaat ttgttctttt ctcatgaatt tataattcct 720
aaatgaagac cagaaagtac aaattgctgg gaggaagaat aggctttatt aatcaactga 780
tgtcttgatt tttctaaatg ggaagattgc tttattttta aactaatta tgggagcaga 840
ttcttagcaa acttcttttg aaaagttaat gttatgatgt gcattaggct gcccatcgt 900
gtatataaat gaagcagatt tgatttttgt attcctacgt ttctctgctt tgtagttgtg 960
gctgtactta aagaaataca gaatttcata tatttaaaaa tgtttaaaat gtgaccaca 1020
gaacattgta aatgattaaa aactaacatg aaaatattac aacctaaaag aattcttaac 1080
ttcacaagtg ttttacttcg acgatgtgcc tttgatttaa tttgggacac ttttttagaa 1140
ggatacatta ttcgtgtttg caacggtctt tgaagagctt ggaaataaaa tttctgctta 1200

```

attaatcatt tttctatgac agcaaaaaaa

1230

<210> 36

<211> 640

<212> DNA

<213> Homo sapiens

<400> 36

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caacccaaat cgctcactat agggaaagct ggtcgctgc aggtaccggt ccggaattcc 60
cgggtcgacc cacgcgtccg gctgtctgaa gatagatcgc catcatgaac gacaccgtaa 120
ctatccgcac tagaaagttc atgaccaacc gactacttca gaggaaacaa atggtcattg 180
atgtccttca ccccggggaag gcgacagtgc ctaagacaga aattcgggaa aaactagcca 240
aaatgtacaa gaccacaccg gatgtcatct ttgtatttgg attcagaact cattttggtg 300
gtggcaagac aactggcttt ggcatgattt atgattccct ggattatgca aagaaaaatg 360
aaccctaaaca tagacttgca agacatggcc tgtatgagaa gaaaaagacc tcaagaaagc 420
aacgaaagga acgcaagaac agaataaga aagtcagggg gactgcaaag gccaatgttg 480
gtgctggcaa aaagccgaag gagtaaaggt gctgcaatga tgtagctgt ggccactgtg 540
gatttttcgc aagaacatta ataaactaaa aacttcaaaa aaaaaaaaaa aaaaaaaaaa 600
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 640
```

<210> 37

<211> 597

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (10)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (15)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (32)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (556)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (558)

<223> n equals a,t,g, or c

<220>

<221> misc feature
<222> (567)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (590)
<223> n equals a,t,g, or c

<400> 37
ggtgagaccn tctanaatat ggttccccgg gntgccgatt cgccaagggtg ctcgggtcctt 60
ccgaggaagc taaggctgcg ttgggggtgag gccctcactt catccggcga ctagcaccgc 120
gtccggcagc gccagcccta cactcgcccg cgccatggcc tctgtctccg agctcgccctg 180
catctactcg gccctcattc tgcacgacga tgagggtgaca gtcacggagg ataagatcaa 240
tgccctcatt aaagcagccg gtgtaaatgt tgagcctttt tggcctggct tgtttgcaaa 300
ggccttgcc aacgtcaaca ttgggagcct catctgcaat gtagggggccg gtggacctgc 360
tccagcagct ggtgctgcac cagcaggagg tcctgcccc tccactgctg ctgctccagc 420
tgaggagaag aaagtggag caaagaaaga agaatccgag gagtctgatg atgacatggg 480
ctttggtctt tttgactaaa cctcttttat aacatgttca ataaaaagct gaacttttaa 540
aaaaaaaaaa aaaaancncg ggggggnccg ctttaaaggg tccaagttan gtacggg 597

<210> 38
<211> 624
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (79)
<223> n equals a,t,g, or c

<400> 38
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ggggcgcgcg agctcgcgnt cttcctgacc cccgakectg gggccgaggc gaaggagggtg 120
gaggagacca tcgagggcat gctcctcagg ctggaagagt tttgcagcct ggctgacctg 180
atcaggagtg atacttcaca gatcctggag gaaaacatcc cagtccttaa ggccaaactg 240
acagaaatgc gtggcatcta tgccaaagtg gaccggctag aggccttcgt caagatgggt 300
ggacaccacg tcgccttcct ggaagcagac gtgcttcagg ctgagcggga ccatggggcc 360
ttccctcagg ccctgcggag gtggctggga tccgcaggct cccctccttc aggaacaagt 420
camctgsacc kgtgcccgtg acgtacgagc tgcccacact gtataggacg gaggactatt 480
ttcctgtgga cgccgggkaa gcacagcamc amccccgcac ctgccctcgg cctttgtgag 540
ctttgtggtc ttcccatcag gaacactgga aagtgcacatt gtgtacacgc tgcagcttgg 600
gggttttttc tttgtattgc tggt 624

<210> 39
<211> 1029
<212> DNA
<213> Homo sapiens

<400> 39
ggccccctcga gggatcctct agagcggccg ccgactagtg agctcgtcga cccgggaatt 60

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cgcgccgcgcg tcgacgctca gtcttccacc aaaggccggt cagttctcct gggctccagc 120
ctcctgcaag gactgcaaga rttttcctcc gcagctctga rtctccactt ttttgggtgga 180
gaaaggctgc aaaaagaaaa agagacgcag tgagtgggaa aagtatgcat cctattcaaa 240
cctaattgaa tcgargarcc caggacaca cgccttcagg ttgtctcarg ggttcataatt 300
tggtgcttag acaaattcaa aatgaggaaa catcgccact tgcccttagt ggccgtcttt 360
tgccctcttc tctcaggctt tcctacaact catgcccagc agcagcaagc agtcattgaa 420
gtcaacaaga gagacatagt cttcctgggt gatggctcat ctgactggg actggccaac 480
ttcaatgcc aacgagactt cattgctaaa gtcattcaga ggctggaaat cggacaggat 540
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gccggctacc gggctgccga ggggattcct aagcttttgk tgctgatcac aggtggtaag 780
tccctagatg aaatcagcca gcctgcccag gagctgaaga gaagcagcat aatggccttt 840
gccattggga acaagggtgc cgatcagggt gagctggaag agatcgcttt cgactcctcc 900
ctgggtgttca tcccagctga gttccgagcc gcccattgc aaggcatgct gcctggcttg 960
ctggcacctc tcaggacctt ctctggaacc cctgaagttc actcaaaca aagggatatc 1020
atctttctg 1029
```

<210> 40

<211> 1107

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1098)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1106)

<223> n equals a,t,g, or c

<400> 40

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tgaatggctt atttaaataa gttggatcta tggactctcc acagcctaga tattatccta 60
ctgaagatgt gcctcgaaag ctgttgagcc acggcaaaaa acccttcagt cagcacgtga 120
gaaaactgcg agccagcatt acccccggga ccattctgat catcctcact ggacgccaca 180
ggggcaaggt gagagtacct gtgcttgggg cgcttcactg cagctgcctg ggggtgcctg 240
tggcaatgcg ttgtcacgct aggtgtactt ttcctttatt tacctatgtt tggggcaagg 300
ggaaatgata tgcaagatac aacttagttg ttgcaataa gaagtgtaat ccatggtgat 360
ttattagcca ttctctgctg ttgatwatgt tacacatgty catttactca aaaacgtgtt 420
tatgtctgga gtactacctt agtagcttgc tgtggttgct tccagaactg ccgagctgta 480
tacatatata ttagataaatt tccttaccm aatttagatg cctgtgawtt tawgaatcag 540
aagycagttt taawtgcmga aaacyaatta tttctctttt amcttacaag aggggtgggtt 600
tcctgaagca gctggctagt ggcttattac ttgtgactgg acctctgggtc ctcaatcgag 660
ttcctctacg aagaacacac cagaaatttg tcattgccac ttcaacaaaa atcgatatca 720
gcaatgtaaa aatcccaaaa catcttactg atgcttactt caagaagaag aagctgcgga 780
agcccagaca ccaggaaggt gagatcttcg acacagaaaa agagaaatat gagattacgg 840
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ttcctcagct ccagggtac ctgcgatctg tgtttgctct gacgaatgga atttatctc 960
acaaattggt gttctaaatg tcttaagaac ctaattaaat agctgactac aaaaaaaaaa 1020
```

aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa ccccgggggg 1080
gggcccggtt cccatttngc cctttng 1107

<210> 41

<211> 1051

<212> DNA

<213> Homo sapiens

<400> 41

cttggaagtc agtcgtagtc ctgcgagtc cggcgggagc tggaagtgc catccacgac 60
agaacaaata ttcggtgctt ttacctacct acaacgagcg cgagaacctg ccgctcatcg 120
tgtggctgct ggtgaaaagc ttctccgaga gtggaatcaa ctatgaaatt ataatacatg 180
atgatggaag cccagatgga acaagggatg ttgctgaaca gttggagaag atctatgggt 240
cagacagaat tcttctaaga ccacgagaga aaaagttggg actaggaact gcatatattc 300
atggaatgaa acatgccaca ggaaactaca tcattattat ggatgctgat ctctcacacc 360
atccaaaatt tattcctgaa tttatttaga agcaaaagga gggtaatttt gatattgtct 420
ctggaactcg ctacaaagga aatggaggtg tatatggctg ggatttgaaa agaaaaataa 480
tcagccgtgg ggccaatttt ttaactcaga tcttgctgag accaggagca tctgatttaa 540
caggaagttt cagattatac cgaaaagaag ttctagagaa attaatagaa aaatgtgttt 600
ctaaaggcta cgtcttccag atggagatga ttgttcgggc aagacagttg aattatacta 660
ttggcgaggt tccaatatca tttgtggatc gtgtttatgg tgaatccaag ttgggaggaa 720
atgaaatagt atctttcttg aaaggattat tgactctttt tgctactaca taaaagaaag 780
atactcattt atagttacgt tcatttcagg ttaaacatga aagaagcctg gttactgatt 840
tgtataaaat gtactcttaa agtataaaat ataaggtaag gtaaatttca tgcactcttt 900
tatgaagacc acctatttta tatttcaaat taaataattt taaagttgct ggcctaata 960
gcaatgttct caattttcgt tttcattttg ctgtattgag acctataaat aaatgtatat 1020
ttttttttgc ataaarwaaa aaaaaaaaac c 1051

<210> 42

<211> 2192

<212> DNA

<213> Homo sapiens

<400> 42

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<210> 43

<211> 353

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (37)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (348)

<223> n equals a,t,g, or c

<400> 43

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tggtccctctg gacaagtggc gggccctgca ctcatgaggg cttccaatgt gctgcccccc 240
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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaanaa aag 353

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<210> 44

<211> 3490

<212> DNA

<213> Homo sapiens

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<221> misc feature

<222> (782)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1311)

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<220>

<221> misc feature

<222> (2298)

<223> n equals a,t,g, or c

<400> 44

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<210> 45

<211> 781

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (750)

<223> n equals a,t,g, or c

<400> 45

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<210> 46

<211> 1431

<212> DNA

<213> Homo sapiens

<400> 46

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<210> 47

<211> 1913

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (43)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1878)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1896)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1905)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1907)

<223> n equals a,t,g, or c

<400> 47

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cctggaatct ttggatgtgt gccagttca cagattggac cctattggtt tgtggtgggg 1860
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<210> 48

<211> 1761

<212> DNA

<213> Homo sapiens

<400> 48

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<210> 49

<211> 956

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (37)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (352)

<223> n equals a,t,g, or c

<400> 49

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cggcctggtg gtggcagtc tcatcgccaa ctccctgaat gacgacatca gcctctacaa 420

```

```

gagcttcctc cagctgggcg ccggcctgag cgtgggcctg agcggcctgg cagccgggctt 480
tgccatcggc atcgtggggg acgctggcgt gcggggcaac gcccagcagc cccgactatt 540
cgtgggcatg atcctgattc tcattcttcgc cgagggtgctc ggcctctacg gtctcatcgt 600
cgccctcatc ctctccacaa agtagaccct ctccgagccc accagccaca gaatattatg 660
traagaccac ccctcctcat cgccctcca ggcccccggc gccccacccc ctagagtgtg 720
ctgtgtatgc ggatgattta gaattgtcat ttctctttac tggatgttta tttataaaga 780
tctggcctgt tcctgctgtc gcggagcggc ccttgtctcc cagctatcta taaccttagc 840
tagagtgtcg ccttgtgggt tcctgttgct gagacttcct ggatggagcc gccctcaccg 900
wmcgkcccgt ggccctgcgc ggagctgtgt ccaataaagt tcttggtgt gaaaaa 956

```

<210> 50

<211> 563

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (510)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (519)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (530)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (558)

<223> n equals a,t,g, or c

<400> 50

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cggacgcgtg ggcgcctcc gaatccagag aggcgctgct gacaccgccg ccacaccgcc 60
gccacaccgc cgctgcctca gtcatgccga agcacgagtt ctctgtggac atgacctgtg 120
gaggctgtgc tgaagctgtc tctcgggtcc tcaataagct tggaggagtt aagtatgaca 180
ttgacctgcc caacaagaag gtctgcattg aatctgagca cagcatggac actctgcttg 240
caaccctgaa gaaaacagga aagactgttt cctaccttgg ccttgagtag caggggcctg 300
gtccccacag cccacaggat ggaccaaagg gggcaggatg ctgacccctc cgctggcttc 360
cagacagacc tgggacttgg cagtcatgcc gggatgatgg gttcctgcgg agacctcag 420
ttgtccattt ccttcctagc ttccttgcaa taaaatcaag ctgcttttgt tggaaaaaaa 480
aaaaaaaaaa gggggcgctc aaaaaccaan ttatttcctt gatgaaatcn acctctttgt 540
tcccattcat ccggcctnaa aaa 563

```

<210> 51

<211> 3215

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (3196)

<223> n equals a,t,g, or c

<400> 51

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gcctcgggtg ggggtgggagc ggggggggaca gtgccccggg aacccgggtg gtcacacaca 60
cgcaactgcgc ctgtcagtag tggacattgt aatccagtcg gcttgttctt gcagcattcc 120
cgctcccttc cctccatagc cacgctccaa accccagggg agccatggcc gggtaaagca 180
agggccattt agattaggaa ggtttttaag atccgcaatg tggagcagca gccactgcac 240
aggaggagggt gacaaaccat ttccaacagc aacacagcca ctaaaacaca aaaaggggga 300
ttgggcggaa agtgagagcc agcagcaaaa actacatttt gcaacttgtt ggtgtggatc 360
tattggctga tctatgcctt tcaactagaa aatttctaag attggcaagt cacgttgttt 420
tcaggtccag agtagtttct ttctgtctgc tttaaattggr aacagactca taccacactt 480
acaattaagg tcaagcccag aaagtgataa gtgcagggag gaaaagtgca agtccattat 540
gtaatagtga cagcaaaggg accagggggag aggcattgcc ttctctgccc acagtctttc 600
cgtgtgattg tctttgaatc tgaatcagcc agtctcagat gcccacaaagt ttcggttcct 660
atgagcccgg ggcagatctc gatccccaag acatgtggag gggcagcctg tgcctgcctt 720
tgtgtcagaa aaaggaaacc acagtgagcc tgagagagac ggcgattttc gggctgagaa 780
ggcagtagtt ttcaaaacac atagttaaaa aagaaacaaa tgaaaaaaat tttagaacag 840
tccagcaaat tgctagtcag ggtgaattgt gaaattgggt gaagagctta sgatttcta 900
ctcatgtttt ttcccttttca cttttttaa agaacaatga caaacaccca cttatttttc 960
aaggttttaa aacagtctac attgagcatt tgaaagggtg gctagaacaa ggtctcctga 1020
tccgtccgag gctgcttccc agaggagcag ctctccccag gcatttgcca agggaggcgg 1080
atttccctgg tagtgtagct gtgtggcttt ccttcctgaa gagtccgtgg ttgccctaga 1140
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cccgcacttt ttacatatat ttgtttcatt tctgcagatg gaaagttgac atgggtgggg 1320
tgtccccatc cagcgagaga gtttcaaaag caaacatctt ctgcagtttt tcccaagtrc 1380
cctgagatac ttcccaaagc ccttatgttt aatcagcgat gtatataagc cagttcactt 1440
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tccagtatga aaatcagcat gccgcctag ttacctaccg gagagttatc ctgataaatt 1740
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ccgtctgtct cagagtccca ggaccttgag tgtcattagt tactttattg aaggttttag 2280
acccatagca gctttgtctc tgtcacatca gcaatttcag aaccaaaagg gaggtctctc 2340
gtaggcacag agctgcaact tcacgagcct ttgtttttct ccacaaaagta tctaacaaaa 2400
ccaatgtgca gactgattgg cctggtcatt ggtctccgag agaggagggt tgccctgtgat 2460
ttcctaatta tcgctagggc caaggtggga tttgtaaagc tttacartaa tcattctgga 2520
tagagtcttg ggaggtcctt ggcagaactc agttaaatct ttgaagaata tttgtagtta 2580
tcttagaaga tagcatggga ggtgaggatt ccaaaaacat tttattttta aaatatcctg 2640
```

```

tgtaacactt ggctcttggt acctgtgggt tagcatcaag ttctccccag ggtagaattc 2700
aatcagagct ccagtttgca tttggatgtg taaattacag taatcccatt tcccaaacct 2760
aaaatctgtt tttctcatca gactctgagt aactgggtgc tgtgtcataa cttcatagat 2820
gcaggaggct caggtgatct gtttgaggag agcaccctag gcagcctgca ggggaataaca 2880
tactggccgt tctgacctgt tgccagcaga tacacaggac atggatgaaa ttcccgtttc 2940
ctctagtttc ttctgtagt actcctcttt tagatcctaa gtctcttaca aaagctttga 3000
atactgtgaa aatgtttttac attccatttc atttgtgttg tttttttaac tgcattttac 3060
cagatgtttt gatgtttatcg cttatgttaa tagtaattcc cgtacgtgtt cattttattt 3120
tcatgctttt tcagccatgt atcaatattc acttgactaa aatcactcaa ttaatcaawa 3180
aaaaaaaaaa aaaccncggg ggggggcccc gaacc 3215

```

<210> 52

<211> 626

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (571)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (572)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (573)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (618)

<223> n equals a,t,g, or c

<400> 52

```

cagtttgtgt attgcggcaa gaaggcccag ctcaacattg gcaatgtgct ccctgtgggc 60
accatgcctg aggttacaat cgtgtgctgc ctggaggaga agcctggaga ccgtggcaag 120
ctggcccggg catcaggga ctatgccacc gttatctccc acaaccctga gaccaagaag 180
acccgtgtga agctgccctc cggtccaag aaggttatct cctcagccaa cagagctgtg 240
gttggtgtgg tggctggagg tggccgaatt gacaaaccca tcttgaaggc tggccgggcg 300
taccacaaat ataaggcaaa gaggaactgc tggccacgag tacgggggtg ggccatgaat 360
cctgtggagc atccttttgg aggtggcaac caccagcaca tcggcaagcc ctccaccatc 420
cgcagagatg cccctgctgg ccgcaaagt ggtctcattg ctgcccgccg gactggacgt 480
ctccggggaa ccaagactgt gcaggagaaa gagaactagt gctgagggcc tcaataaagt 540
ttgtgtttat gccaaaaaaa aaaaaaaaaa nnnngggggg cgctttarag rwtcctccaa 600
ggggccaact tacccttnca tgcaaa 626

```

<210> 53

<211> 920

<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (617)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (621)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (725)
<223> n equals a,t,g, or c

<400> 53
atgagggctc ggctacagca agaagtagag gagcagctca aaaagaaatg tttcactctg 60
ctctgctact atgatcccaa ttcagatgct gacagtgaaa ccgtgaaggc agcaaagggtg 120
tggaactcgc cagagtcctg gtgggtgagc agcagcagtg ccasgatgcc aagagccagc 180
agaaggagca gatgttgctg ctggagaaka agagtgcctg ttactcccag gtgcttctcc 240
gctgcctcac tttgctgcag aggccttcttc aagaacaccg gctgaagact caatccgagc 300
tagaccgcat caatgcccag tacctggaag tcaagtgcgg tgctatgac ctttaagctga 360
ggatggagga gctaaagatt ttgtccgaca cttacactgt tgagaaaagt gaagttcatc 420
gtctgattag ggaccgtttg gagggagcca ttcacctaca ggagcaggac atggagaact 480
caagacaggt cctgaactcc tatgaggtcc ttggggagga gtttgacagg ctggtgaaag 540
agtacaccgt actcaagcag gcaacagaga acaagcgggt ggccctccag gagttcagca 600
aggtctaccg ttgagcntcg ncagggccag gagacatggc ttctgcatag ctgctgcctc 660
ctaattcttc tgctagtggg accaccttca cctggggctg ccttcagtac aagggagtgt 720
ggaanatstt acgcttgaaa cactgcagtc atttaggcac tctcctggtt tctctttatt 780
ttttatgact gggcctcttc tggaaaatct agcaaggaga tttatataat ttttatgcat 840
agctgtgtgt cagtgtcagc cctgtattgt atttgattat ctcctgaata aagttatgat 900
attawaaaaa aaaaaaaaaa 920

<210> 54
<211> 1090
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (1024)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1034)
<223> n equals a,t,g, or c

<400> 54

```

gagtaaccca gaaatgatgt tgcatttttt gctttacctg ataattgaaa ctttcaacaa 60
tctctggagt gactttttct cctcgaattg aaacaagtct atggcaaaag aagctgcatt 120
tttttcacaa aaggggaagat ggtaacaatg gtcacttcaa acttttgggc taaattatat 180
gtacacagaa atgttcaaaa tcatagtttt aatgtgtttt gaaaaggcca cacaattata 240
ctttatcttt tcttaataat cctgcaaadc tctgccctgg aatccgaaat ctgaaaatgt 300
actggccttg acaaaatttg ttttgtgtgt tagagttata aatcattaat ctttatttcg 360
gggtggtttac gtttatgccg gttcctttat atttaaattt cttgttttat atattttgaa 420
tgtctttata gatttcttta aatttcctta tagaaccatt aatagaaaat cattacattt 480
aaaatatacc ttacagcaaa agcatccaaa taagtatagg gtttatgtcc ttatttttct 540
ttcagctgaa tacgaatgaa cacagtgggt gaatttctga agggaagtga tgaaattata 600
tttatttcag tgggcacttt tccattttac cactgtacca ttatttgggt cctggagtta 660
tactactaatt ttcagtatat tactgttaaa ttaccaaacac aaggcaattt atttgaaaga 720
ttccgtttat cctgccattg ctttgaaaag cagcaggaaa cgaaatcctt tgacttgtat 780
cagcttctgc agagcatctt tgttttcctt tgcctttgtt ttcctacctt ttgaatcaga 840
ttccgtttta gtcaggaaga cttcttggga ccattcttag taacctgaaa tttctttttt 900
aattgcatga agtggtattg tcatgagcaa atgatgtgct tatttctccc tcactgttga 960
atatctttga acttgctgtt ttcaatatgg gcagcacaaa ggtgagagat acatattaat 1020
agtngtatgt attnctctta tacattagat acctatattt aaatgaaagg gccaatattg 1080
aaacatatat                                     1090

```

<210> 55

<211> 1464

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (766)

<223> n equals a,t,g, or c

<400> 55

```

ccgctccgga attcccgggt cgacccacgc gtccgcccac gcgtcgccca cgcgtccggg 60
gacgtcttca gctctcggcg cacggcccag cttccttcaa aatgtctact gttcacgaaa 120
tcctgtgcaa gctcagcttg gagggtgatc actctacacc cccaagtgca tatgggtctg 180
tcaaagccta tactaacttt gatgctgagc gggatgcttt gaacattgaa acagccatca 240
agaccaaagg tgtggatgag gtcaccattg tcaacatttt gaccaaccgc agcaatgcac 300
agagacagga tattgccttc gcctaccaga gaaggaccaa aaaggaactt gcatcagcac 360
tgaagtcagc cttatctggc cacctggaga cgggtgatttt gggcctattg aagacacctg 420
ctcagtatga cgcttctgag ctaaaagctt ccatgaaggg gctgggaacc gacgaggact 480
ctctcattga gatcatctgc tccagaacca accaggagct gcaggaaatt aacagagtct 540
acaaggaaat gtacaagact gatctggaga aggacattat ttcggacaca tctggtgact 600
tccgcaagct gatggttgcc ctggcaaaag gtagaagagc agaggatggc tctgtcattg 660
attatgaact gattgaccaa gatgctcggg atctctatga cgctggagtg aagaggaaaag 720
gaactgatgt tcccaagtgg atcagcatca tgaccgagcg gagtgncccc acctccagaa 780
agtatttgat aggtacaaga gttacagccc ttatgacatg ttgaaaagca tcaggaaaaga 840
ggttaaagga gacctggaaa atgctttcct gaacctgggt cagtgcattc agaacaagcc 900
cctgtatttt gctgatcggc tgtatgactc catgaagggc aaggggacgc gagataaggt 960
cctgatcaga atcatggtct cccgcagtga agtggacatg ttgaaaatta ggtctgaatt 1020
caagagaaag tacggcaagt ccctgtacta ttatatccag caagacacta agggcgacta 1080
ccagaaagcg ctgctgtacc tgtgtggtgg agatgactga agccccacac ggcctgagcg 1140

```

```

tccagaaatg gtgctcacca tgcttccagc taacaggtct agaaaaccag cttgcgaata 1200
acagtccccg tggccatccc tgtgaggggtg acgttagcat taccaccaac ctcatttttag 1260
ttgcctaagc attgcctggc cttcctgtct agtctctcct gtaagccaaa gaaatgaaca 1320
ttccaaggag ttggaagtga agtctatgat gtgaaacact ttgcctcctg tgtactgtgt 1380
cataaacaga tgaataaaact gaatttgtac tttaraaaaa aaaaaaaaaa aactyrgggg 1440
ggggcccgka cccattggcc ttag                                     1464

```

```

<210> 56
<211> 985
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc feature
<222> (647)
<223> n equals a,t,g, or c

```

```

<220>
<221> misc feature
<222> (875)
<223> n equals a,t,g, or c

```

```

<220>
<221> misc feature
<222> (962)
<223> n equals a,t,g, or c

```

```

<220>
<221> misc feature
<222> (973)
<223> n equals a,t,g, or c

```

```

<400> 56
agaagttgct agtgttcaat gcagctgggg tgaaacccca ggggcaaggt ggctggcttt 60
gatctggacg ggacgctcat caccacacgc tctgggaagg tctttccac tggccccagt 120
gactggagga tcttgtaccc agagattccc cgtaagctcc gagagctgga agccgagggc 180
tacaagctgg tgatcttcac caaccagatg agcatcgggc gcgggaagct gccagccgag 240
gagttcaagg ccaaggtgga ggctgtggtg gagaagctgg gggccccctt ccaggtgctg 300
gtggccacgc acgcaggctt gtaccggaag ccggtgacgg gcatgtggga ccatctgcag 360
gagcaggcca acgacggcac gcccatatcc atcggggaca gcatctttgt gggagacgca 420
gccggacgcc cggccaactg ggccccgggg cggaagaaga aagacttctc ctgcgccgat 480
cgctgtttg ccctcaacct tggcctgccc ttcgccacgc ctgaggagtt ctttctcaag 540
tggccagcag ccggttcga gctcccagcc tttgatccga ggactgtctc ccgctcaggg 600
cctctctgcc tccccagtc cagggccctc ctgagcgcca cccggangtg gttgtcgcag 660
tgggattccc tggggccggg aagtcacact ttctcaagaa gcacctcgtg tcggccggat 720
atgtccacgt gaacagggac acgctaggct cctggcagcg ctgtgtgacc acgtgtgara 780
cagccctgaa gcaagggaaa cgggtcgcca tcgacaacac aaaccagac gccgcgagcc 840
gcgccaggta cgtccartgt gcccgagccg cggngtacc cctgcccgtg cttcctcttc 900
accgccactc tggagcaggc gcgccacaac aaccgggtga gcccgcttca gcccgggaca 960
cnccccgggg atngcacccc ctgga                                     985

```

<210> 57
<211> 1246
<212> DNA
<213> Homo sapiens

<400> 57
ctcagagtcg cgaggccgga cgcagcgcgc gccgccccac tcgccccagc cgccgccatg 60
aaggccgtgg tgcagcgcgt caccgcgggc agcgtcacag ttggaggaga gcagattagt 120
gccattggaa ggggcatatg tgtgttgctg ggtatttccc tggaggatac gcagaaggaa 180
ctggaacaca tgggccgaaa gattctaaac ctgcgtgtat ttgaggatga gagtgggaag 240
cactggctga agagtgtgat ggacaaacag tacgagattc tgtgtgtcag ccagtttacc 300
ctccagtgtg tcctgaaggg aaacaagcct gatttccacc tagcaatgcc cacggagcag 360
gcagaggggt tctacaacag cttcctggag cagctgcgta aaacatacag gccggagctt 420
atcaaagatg gcaagtttgg ggcctacatg cagggtgcaca ttcagaatga tgggcctgtg 480
aacagtagag tggaatcgcc agctcccggc actgctacct ctgacccaaa gcagctgtca 540
aagctcgaaa aacagcagca gaggaagaa aagaccagag ctaagggacc ttctgaattc 600
aagcaaggaa agaaacactc cccgaaaaga agaccgcagt gccagcagcg gggctgaggg 660
cgacgtgtcc tctgaacggg agccgtagct caggaggcag aattcagtggt gttatcattg 720
ggcagaactg gatcctgaaa aattcaagat gctaagcacc tacactactt taagaatttg 780
gaactgaaac atgaagagga agacagaaat aagaatttgg gaacctgaat agctctgcaa 840
aaaacaccaa aggaccgttt tatcgttttc tgttgttgct gtggtggagt gatgcagtgg 900
gcactkccsg tgggccaggg ggcgggtgcg catgtggtag aagggtgtgcg ctctgtgcctc 960
ccccacagaa aggctttgtt ggtttctacc acatcttggc ttgcttttgg aacaggctgg 1020
ccccagcatc atttgtcatc aagtccactg tgggtgtattc tgcgtgtcca tggcgggggt 1080
tctccaayac actcacactg tccatgttct ttttattgcc agggcccggtg ttgaagtgtc 1140
aagagagcaa tcatcaatga taatgtattg tgtgagacct ttgcatcttg taaattttct 1200
cttttttcta aaaataaata ataataaaat cctaaatctc aacaaa 1246

<210> 58
<211> 1966
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (1926)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1942)
<223> n equals a,t,g, or c

<400> 58
gggagaaaga tccttcactc acagaaccag ttattagggg gttaatgaaa ttttggccta 60
aaacatgtag tcaaaaagag gtcagtgtcc ttggggactg gaagaaatat tggatgtgat 120
tgaaccttca caatttgtaa aaatccaaga acctttgttt aaacaaatcg ccaagtgtgt 180
atctagcccc catthtcagg tggcagaaag agcactctat tattggaata atgaatacat 240
catgagttht atagargaaa actctaactg catccttccc atcatgtttt ccagccttta 300
taggatttca aaagaacatt ggaatccggc tattgtggcg ttggtgtaca atgtgttgaa 360
ggcatttatg gaaatgaaca gcacatgtt tgacgagctg acagccacat acaagtcaga 420


```

tcgtcagcgt gagaaaaaga aagaaaagga gcgtgaagaa ttgtggaaaa aattggagga 480
tctggagtta aagagagggtc ttagacgtga tggataaatt ccaacttaac aaaaacaatg 540
acaacaacat tactaacctg tggagtcaca cgtttatgta gtagaagatg gagcaacagt 600
tttctgtatt gtgcaacttt acagtagatt tcacctttgt ttcattatta cagcagcact 660
gtatatacct gtctcctaagt aaaggaaaaa acaaaataag gacttcaatc caaagtttgg 720
acagtagatg gacttctcag aactttgcaa acataatcat tgttctcacc ctcttttaaa 780
aaaaaaaaatc ggtcttcaaa gatctgttga tgaaattgct atgttaaaat tccattatcg 840
ggagttcctt atttatcact agcagagagt atgatacaat tttcaaatgt gaacaatcct 900
aaatttagct tgtctttctg ctaagctgtt aaatgtattt atagtaaagg aagaaaaaaa 960
gactgtcatt tccttataag tttgtgtaac atcctcctct ggataacttg actgtaattt 1020
racatctttt tcttttgcac atcttcctga gttgaatgtc cacgtggaat ggggtcatga 1080
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caaaggtgca tcgtgaccaa attgtttaaa aaaaaaaaac aaaaaaaaca aaatctaggg 1860
ctgtatttta tatatatata tatatatata tatatatata tatatatata tatatatgtc 1920
cttatnggac tctctgcttt gntattttaa taaaaaatct tacatc 1966

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<210> 59

<211> 1611

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (7)

<223> n equals a,t,g, or c

<400> 59

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tggcagaaac agataaaatc actctggagg tagcaaaact tatcaaagat gatttctctac 720
aacaatatgg atatactcct tatgacaggt tctgcccatt ctacaagaca gtagggatgc 780

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aatatttaat tttcaaaaac ataataatta atgttccaat tatgcatcac ttccccagk 1560
ataaaycagg aatgkttgtg agaaaccatt gggaactata ctctttttta a 1611

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<210> 60

<211> 1849

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (100)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (977)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1846)

<223> n equals a,t,g, or c

<400> 60

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agacctcagt cacctattac cggttggagg aggtggcaaa gcgcaactcc ttgaaggaac 180
tgtggcttgt gatccatggg cgagtctacg atgtcacccg cttcctcaac gagcaccctg 240
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gctactacac atcggaaaagc aaatcctcct gaggaggcct tgctgaagtt agaaagtgc 540
tccacttttg ggcgaaaact agagacttgc ttgggggctg cagaagtgcc ctctcctcga 600
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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaggngnga 1849
```

<210> 61

<211> 233

<212> DNA

<213> Homo sapiens

<400> 61

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taaaaatttt ttaatcttga gaaraaacat acagktcata catataaaaa gccttgaaaa 120
tattattccc ttgactcac taattacact gctggaatat aaagaaatga tcctaaatat 180
atatgtagtt ttatggctct aaatatgtat aaagctttat gatcactcgt gcc 233
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<210> 62

<211> 2333

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (3)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (6)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (7)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (14)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2327)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2331)

<223> n equals a,t,g, or c

<400> 62

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gaagaaggtc cagatgtgct taggtggctg gacagacagc tcattcgact gtgtcagaaa 360
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tatccacagt ttatgtttca tttaagaaga tcttctttcc tgcaagtttt taacaatagt 480
cctgatgaga gttcatatta tcgtcaccat tttatgcgtc aagatctgac ccagtctcta 540
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ttgattttatc atggtgagac catagcacag tggcggaagt caggatacca ggatatgcct 720
gagtatgaaa atttccgcc cttctgcaa gcccagtggt atgatgcaca ggaaattctt 780
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aaatgccaat aaaatataact tttcactggt aaaaaaaaaa aataaanacc nta 2333

<210> 63

<211> 1470

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1410)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1414)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1419)

<223> n equals a,t,g, or c

<400> 63

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tgtacgggat ccgagtggag gtgagagggg ctcaccactt ccctccctcg cagccctatg 240
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tgtctgaggt cgcacagacc ctgctcacc aggacgtgag ggtctgggtg tttcctgagg 480
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tgcaggccca gggtcccat gtcccatag tcatgtcctc ctaccaagac ttctactgca 600
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cggaagggtc gacaccagat gacgtccag ctctggctga cagagtccg cactccatgc 720
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<210> 64

<211> 939

<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (3)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (4)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (11)
<223> n equals a,t,g, or c

<400> 64
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<210> 65
<211> 2068
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (308)
<223> n equals a,t,g, or c

<400> 65
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<210> 66

<211> 1391

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (16)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (20)

<223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (25)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (27)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (1343)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (1358)
 <223> n equals a,t,g, or c

<400> 66
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 gttagcctaa gtcacttcca ccctccaatg ttgtgaatgc agtctctagc attcgctatt 180
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<210> 67
 <211> 659
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 <213> Homo sapiens

<220>
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<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (475)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (585)
<223> n equals a,t,g, or c

<400> 67
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<210> 68
<211> 2981
<212> DNA
<213> Homo sapiens

<220>
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<223> n equals a,t,g, or c

<220>
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<222> (2948)
<223> n equals a,t,g, or c

<400> 68
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<210> 69

<211> 603

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature
<222> (584)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (590)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (595)
<223> n equals a,t,g, or c

<400> 69
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cgcttggtg tgactcgcgc acctgcaagg ccgcctccgg gctgtggcgt gggagatgat 300
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agc 603

<210> 70
<211> 1101
<212> DNA
<213> Homo sapiens

<220>
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<222> (195)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1080)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1081)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1090)
<223> n equals a,t,g, or c

<400> 70

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<210> 71

<211> 714

<212> DNA

<213> Homo sapiens

<400> 71

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tgctgccatt tttattgggtg tttgattatt ggaatgggtc catattgtca ctccttctac 660
ttgctthaaa aagcagagtt agattthttgc acattaaaaa attcagtatt aatt 714

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<210> 72

<211> 2890

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (555)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2853)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2882)

<223> n equals a,t,g, or c

<400> 72

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<210> 73

<211> 2488

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (277)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (446)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2382)

<223> n equals a,t,g, or c

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<221> misc feature

<222> (2412)

<223> n equals a,t,g, or c

<400> 73

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<210> 74

<211> 711

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (696)

<223> n equals a,t,g, or c

<400> 74

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<210> 75
 <211> 906
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (1)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (4)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (362)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (889)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (894)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (897)
 <223> n equals a,t,g, or c

<400> 75
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<210> 76
 <211> 271
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc feature
 <222> (36)
 <223> n equals a,t,g, or c

<400> 76
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 aaaacaaaac cctctgtatc attatgtgaa caacgggtgca aaaaagagga gacacagttt 180
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<210> 77
 <211> 673
 <212> DNA
 <213> Homo sapiens

<400> 77
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 ttccggaagc tacacaactc ctacacagac gtgatgtgca accccttcta caaccgggg 420
 gaccgcatcc agtccagggc ctttgataac atggtgacgt cgatgatgat acaggtgtgc 480
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 gggggggggc cg 673

<210> 78
 <211> 367
 <212> DNA
 <213> Homo sapiens

<400> 78
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367

<210> 79

<211> 1344

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1319)

<223> n equals a,t,g, or c

<400> 79

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<210> 80

<211> 3748

<212> DNA

<213> Homo sapiens

<400> 80

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aattgctatt gcagctttat attcaatatg atgtgcctgt aaaccaagga gttttccccg 3540

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aaaaaaaaa aaaaaaaaaa aaaaaaac 3748

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<210> 81

<211> 1891

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1869)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1879)

<223> n equals a,t,g, or c

<400> 81

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tttccgttna agtcccccnt taggaccccc g 1891

<210> 82

<211> 1954

<212> DNA

<213> Homo sapiens

<400> 82

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<210> 83

<211> 936

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (895)

<223> n equals a,t,g, or c

<220>

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<222> (930)

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<220>

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<222> (936)

<223> n equals a,t,g, or c

<400> 83

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<210> 84

<211> 1513

<212> DNA

<213> Homo sapiens

<400> 84

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<210> 85

<211> 1298

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (3)

<223> n equals a,t,g, or c

<400> 85

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<210> 86

<211> 2009

<212> DNA

<213> Homo sapiens

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 <222> (1955)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (1959)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (2008)
 <223> n equals a,t,g, or c

<400> 86

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<210> 87
<211> 534
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
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<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (477)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (526)
<223> n equals a,t,g, or c

<400> 87
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<210> 88
<211> 4302
<212> DNA
<213> Homo sapiens

<220>
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<222> (1015)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (4270)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (4274)
<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (4296)

<223> n equals a,t,g, or c

<400> 88

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ttcttcaaca gcagaaatta acgaaacaac aacctcatct actgattttc tggctagagc 240
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<210> 89

<211> 2782

<212> DNA

<213> Homo sapiens

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<221> misc feature

<222> (82)

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<220>

<221> misc feature

<222> (743)

<223> n equals a,t,g, or c

<400> 89

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<210> 90

<211> 1037

<212> DNA

<213> Homo sapiens

<400> 90

```

aattcggcac gagctgtctg cgaagtggcc cttgattaca aaaagaagaa acacacctaa 60
acactttatc tccaagttac aaaagtttga ggtgcagagg gaaggccaga tttttttttt 120
aatgaaatta tatagattag atctcagtat ttaaactgtt cctcaatttt gtgaggctgt 180
gttggaataa acccgctctt agtgctgttg gtatgcaagg cagcgggtgct taatcaatat 240

```

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ttcctgtgct caccagaggc aaaatgtacc aatatcctga caccattctc tctccattta 300
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ttaaacagat cgcattattat gatcttgctg cagccacagt gcagctccac attaaactcta 420
cagaccaaac catttgatc tggcatcact tactaacaca cgacatgcgg cttttctgca 480
tcaactgcta tgacggttaa gaatgtcagt atacaagaag gaatagaaaa ctgatactgt 540
tttaaataat ctgtaatttc aatTTTTTTT ttttttTgct gaaatacatt atattgtacg 600
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gtggtcgctc aggctgggtg ctcagtcgta cgacctgtac ctctcaactt ttgccctatc 960
tgttaaatat atgctatgtc attaaatgct tttaaatcta aaaaaaaaaa aaaaaaaaaa 1020
aacggggggg ggcccg 1037

```

<210> 91

<211> 1052

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (76)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (962)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (965)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1044)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1048)

<223> n equals a,t,g, or c

<400> 91

```

gggcacgagt gcagggtgat gctgcactgc acccagcatc tctgcttatc aggaggctct 60
ggagccacac cgcagnaagc acacgccctt ttgagccaga catgctgact ttctaataag 120
gatgttctct ctccacagct gaaagatgaa aattctaagc tgagaagaaa gctgaatgag 180
gttcaragct tctytraagc wcawacagaa atgggtgagga cgcttgagcg gaagttagaa 240
gcaaaaatga atcaaggagg aaagcgacta ccacgacctg gagtcggtgg ttcagcaggt 300

```

```

ggagcagaac ctggagctga tgaccaaacg ggctgtaaa gacagaaaacc acgtcgtgaa 360
actaaaacag gaaatcagtt tgctccaggc gcagggtctcc aacttccagc gagagaatga 420
agccctgcgg tgcggccagg gtgccagcct gaccgtggtg aagcagaacg ccgacgtggc 480
cctgcagaac ctccgggtgg tcatgaacag tgcacaggct tccatcaagc aactggtttc 540
cggagctgag aactgaatc ttgttgccga aatccttaaa tctatagaca gaatttctga 600
agttaaagac gaggaggaag actcttgagg acccctgggt gttctcagca tgaagctccg 660
tgtataccct gaggtcacca ccgctcgatc taaatgtgca gttgtgtcct taaatatgca 720
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ttggccacca caatgggagc agccctggcc cgagttgtct ctgtggtttc tatgcagccc 840
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tnganggggc ccaagcttac gcgtgcattc gacgtcataa cttttttccc tataaggag 1020
cgattataag cttaggcact tgnccngg tt 1052

```

<210> 92

<211> 1234

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1115)

<223> n equals a,t,g, or c

<400> 92

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cttcggcgca tgcgcgctga ggctgcctg accgaccttc agcagggtg tggctaccat 60
gttctctcgc gcgggtgtcg ctgggtgtgc ggctggacc ttgcagccgc aatggattca 120
agttcgaaat atggcaactt tgaaagatat caccaggaga ctaaagtcca tcaaaaacat 180
ccagaaaatt accaagtcta tgaaaatggg agcggcagca aaatatgccc gagctgagag 240
agagctgaaa ccagctcgaa tatatggatt gggatcttta gctctgtatg aaaaagctga 300
tatcaagggg cctgaagaca agaagaaaca cctccttatt ggtgtgtcct cagatcgagg 360
actgtgtggt gctattcatt cctccattgc taaacagatg aaaagcgagg ttgctacact 420
aacagcagct gggaaagaag ttatgcttgt tggattggg gacaaaatca gaggcatact 480
ttataggact cattctgacc agtttctggt ggcatcaca gaagtgggaa gaaagcccc 540
cacttttga gatgcgtcag tcattgccct tgaattacta aattctggat atgaatttga 600
tgaaggctcc atcatcttta ataaattcag gtctgtcatc tcctataaga cagaagaaaa 660
gcccatcttt tcccttaata ccgttgcaag tgctgacagc atgagtatct atgacgatat 720
tgatgctgac gtgctgcaaa attaccaaga atacaatctg gccaacatca tctactactc 780
tctgaaggag tccaccacta gtgagcagag tgccaggatg acagccatgg acaatgccag 840
caagaatgct tctgagatga ttgacaaatt gacattgaca ttcaaccgta cccgccaaagc 900
tgtcatcaca aaagagttga ttgaaattat ctctgggtgt gcagctctgt aaagaaggaa 960
aattcagcca gttgattttg tttttagctt actgctgcct ttgtccgaag aaactgttcc 1020
tccattatth gaattactga agacagcaag atatttgtaa attatcttaa aataaacaac 1080
ttaaaataaa atcattgttt ttcttatata taagnacaat agatatagtt tttgaaatga 1140
gatgatacta aaacatttaa aaatattaat atgctactat taaaattttt tagtagaaga 1200
caaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1234

```

<210> 93

<211> 1571

<212> DNA

<213> Homo sapiens

<220>
 <221> misc feature
 <222> (1497)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (1516)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (1530)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (1546)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (1571)
 <223> n equals a,t,g, or c

<400> 93

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gagcctgatt ccatcaaaaa gaaaggagta aaaagcaagt tacagcccag cagcacatct 60
gctttccctg ggtccggggg ctgccasgag ggascgggar gtctgtccac ctcacaaggc 120
aggctctgtc agcttttgtc actccctgat ttcttattct ttgttacctt ttttcgcctg 180
actgattttt acttggcatt taagttcccc ttagcactgc cagattctaa aaggttatat 240
tcttttttaa aaagaagaga aagaaagaag gaaagaagac aaagaaagaa taaaaacctc 300
cgagtgttaa ctacttttcc ctttcttctt ttttttataa agaatacatt ctttcacatc 360
ttgaatttct gtgaatttta gtttccattc tttctgcctt tgcaaaccag acacctaaat 420
tatacgtsga agctgttaaa aagttgtttt ttttttttta atggaaaata tccaagaagc 480
agcccaggag tatctgacat ggtggaatgg aatcagttag aaagcgaaga aatcactaaa 540
aaaagttact tctttttttc cccaccagtt ataatcttca accttactag tttataacag 600
tttaatgtcc tatagaagga tcctccacta aagttataat ttttaagtata gtcatataga 660
gagatcccta atcccctggg taatctagat actaaagggt gggaagaaca gtcattattga 720
cattctttta tccaaaacca ctgtttgaaa ttagtaagga tattttcagc attcccaaaa 780
acatgttatt agcacgttga gctgaaaacg tttttcttcc tcagttagta cagaaaccaa 840
agcagctctg gtgtatgtct atgtatagac tgtatcgtac ctgggctcat ggagtagtct 900
aaatttaaaa cgtcctctct tctacctcca atgaaaatgt ttccgtgtgt ggcgtctgat 960
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gtgcgctgtc agtgtgggtt tacacttatg agtgttgtca ttacatgtgt tctgtctctc 1140
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tagtagttcc ctgtcacaaa gggatgccaa ggcttaccga tctgtctgtc aaaaccaaag 1260
atgtctggga aatccctcga gaatccctgc agttgatcaa gagactggga aatgggcagt 1320
ttggggaagt atggatgggt atgtgagac tcaattactc tcttattagc ttcccgtttt 1380
ggaagatccc aaacacaaaa gatggaagggt gaaaataaag actgcgtgac cgggaagaaa 1440

```

gtttgaatta ctaatagtgg ggaataataa tttcagtttt ggtttttaaac atctggnatt 1500
cctaaaaaaa aaaaaaanaaaa aaaaaaaacn cgggggggggg cccggnaccc aattcccccc 1560
aaaggggggg n 1571

<210> 94
<211> 1872
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (4)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (6)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (51)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1271)
<223> n equals a,t,g, or c

<400> 94
gggnancccc cccggggggg aaaacggatg ggccccgggc cccccaaaaa ntacccccga 60
ggttttttttt tttttttttg atttaataaa gttttatttt tccaaatgta cagctgggtg 120
gacctattca tgcattctca ccagcagctg gagcatctcc acccttggtg tttctgggtg 180
aaattacttg agctctgtgc tttgaaacca gtttgataag tcctttacta aggagctcct 240
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gtccttcttc ttcttgctgt ccttaggcgg cattgcgaag ctccggagaat agcagcagac 420
accgcagcct cgtcaagatg tcggacaaaa aggaagcgct gctcagaaac gkgcccaaaa 480
accaccgtcc gctgtgagta cttccggggc aagaggcgga gccaggcaga rgaagtccca 540
cggcgaagcg ctccgctctt agcctgaggc ggaagacagg aagyggattc tagttcccaa 600
gccgcaccgc ctaaataactg ccggagtctg cgctagtgtg gacgcagtac tatagcgtg 660
ttttcctgca ctgataaacg aaaagcaatc caccaggctc cggcagctaa ctttcgggca 720
ctacttatgc ccgagcgtgt cgctcccagt gcgcaagtgc agcaggtggc tgcacggggg 780
gcgcgggagg aggaggagga ggaggaggag gctgggggtg ggccggcggc aagtgtgtg 840
atgcggttcc ggggaggggc cgtcgggtag aggtcgaata ccagtttccg agcggcaagg 900
cagcgatggc gatttttagt gtgtatgtgg tgaacaaaagc tggcggcttg atttaccagt 960
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tgggtcatgc agtgcctggc atcaatggca tggacgtgaa tggcaggtac acggccgacg 1140
ggaaagaggt gctggagtat ctgggtaacc ctgctaatta cccggtgtcc attcgatttg 1200
gccggccccg cctcacttct aatgagaagc ttatgtctggc ctccatgttc cactcgctct 1260


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ttgccatcgg ntcccagctg tctcctgaac agggaagctc aggcattgag atgctggaga 1320
cagacacatt caaattgcac tgctaccaga cactgacagg gatcaagttt gtggttctag 1380
cagatcctag gcaagctgga atagattctc ttctccgaaa gatttatgag atttactcag 1440
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accagaacct gaagctagct ctggaggtgg cagagaaggc tggaactttt ggacctgggt 1560
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tgttgacact ccagtggaaa tcccagcagc cttgttagtg cacttgaaag tgggagaatg 1680
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ataccatggt cttactttcc aactctgtac agatttattt atggaggagc taggtccata 1800
aatgttgtaa taaatattcc ttgatcttg gtgtttgcaa aaaaaaaaaa aaaaaaact 1860
cgagactagc gg                                     1872

```

<210> 95

<211> 1516

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1505)

<223> n equals a,t,g, or c

<400> 95

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ggagggcaga aagggagagt gctgggcggg cttagtcgga gattgaggac tgggaatccg 60
cttccgggag ggcactgtct agtgacagg caacctggcc ttsgcctcct agcccgagaa 120
gccgaatctc cctaataccct gtgacctgtg tcacctctgc atcgcgagga gggggataag 180
tggggagaag tctggtgtca gatgggatgg cgccggaaga gggtgccaca gcggggacgg 240
aaggcgcccc caccccaact ccacgggaat ataaacaatt tgtattttcc gatcaggtgg 300
cgggacaggc ttcatgtgga cagccctaac ccagctgctg aatgccagag gccacgaagt 360
acgttggtct cccgaaagcc cgggcccggc cggatcacgt gggatgagct cgctgcatcg 420
gggctgccga gctgcgatgc cgccgtcaac ctggccggag agaacatcct caacctctc 480
cgaagatgga atgaaacctt caaaaagag gttctcgga gccgcctaga gaccacccaa 540
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ggtgtagctt actaccagcc cagtctgact gcggagtatg atgaagacag cccaggaggg 660
gactttgact ttttctccaa cctcgttaac aaatgggaag ctgcagccag gcttcttgga 720
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atcccacggc gaacactggc cactggctac cagtattcct tcccagagct aggggctgcc 1140
ttaaaggaaa ttgtagccta agtaggtcat ggcaagggcc tgaggcctgt tcctcacagg 1200
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ttggtttctc tacatgtcct gcagctgccc cacttctcct ttacgctgtg tagagaatgc 1440
tctgcagttt aggcaataaa aataaattgt ctcactaaaa aaaaaaaaaa aaattggggg 1500
gggnccccgt acccat                                     1516

```

<210> 96

<211> 1770
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (485)
<223> n equals a,t,g, or c

<400> 96
agtgccagga gtgggttcca gatcgggaga gctacgtgtc ccacatgaaa aagagccacg 60
gtcggacatt gaagcgggtac ccatgccggc agwgtgaaca gtccttccac accccaaca 120
gcctgcgcaa acacatccgc aacaacatg acacagttaa gaagttctac acctgcgggt 180
atgcacaga ggacagcccc agctttcctc ggccctccct tctggagagc cacatcagcc 240
ttatgcatgg catcagaaac cctgatttga gccagacgtc caaagtgaac cctccgggtg 300
gacattcccc tcaggtgaac catctgaaaa gaccagtcag tggagtgggg gacgctccag 360
gcaccagcaa tggcgcaact gtctcttcca ccaaaaggca caagtccctt tttcagtgcg 420
cgaaatgtag ttttgccaca gactcggggc tcgagtttca gagccacata cctcagcacc 480
aggtnggaca gytccacagc ccaatgtctc ctctgtggtt tgtgctacac ctctgccagc 540
tccctcagcc gccacctctt cattgtccac aaggtgagag accaggagga ggaggaggaa 600
gaggaggcgg cggcacggag atggcagtgg aggtggcaga gcagaggagg gctccgggga 660
rgargtgccc atggagacta gagagaatgg actggaagaa tgtgccggtg agccyttgtc 720
agctgaccca gaggcgagga gattgctggg cccggccctt gaggacgatg gtggccacaa 780
tgatcacakt caaccacagg cytytcagga ccaggacagc cacacactgt cccctcaggt 840
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cttgctgcct tcagccagg cgctcctcag agctctatct tectgcagac accagctctc 1260
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tgtctctgtg ggtgggggtg gagaaacctc tgctgcacac ctctgttttg aacctgggca 1500
gagcaggagg taaggcaaag gcaggcaggc accaagaacc agacccttg agaaggcgt 1560
gtgggtgggt ctttgttctg ctgttctgcc ttctctgaca ggtgggggtg gggcacacag 1620
acattggaat atttgtactg ctctcgtgcc atttgagagg cttgctgccc caggcaggcc 1680
agcccctact cctcttggt acactcatgt tkctcagact atatttcaaa taaaaaatct 1740
tctcaccatg caggtaggct cttgtattcc 1770

<210> 97
<211> 938
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (183)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (293)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (360)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (938)
<223> n equals a,t,g, or c

<400> 97
gcagaagagg ggagattggg ggagagatga cagctgcagg gatggttgtr agccgctagt 60
ratggagagc agaggggagag ggccaggctc caractccca cacgcccaca cagcacctct 120
gccaggccta ggagaagaca ggtgcagctc ttgcagctct gcgggtgtgc ggccaaaggc 180
aangcccacg ggctggatgt cacttccccg actgtctctt ggttggcttg tccttgtgca 240
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aaggggggaa ttgggggtcca ccatagtctt ctgctctggt cctccacggg tgggaccagn 360
atggaagtct cctgcctaac ctcaactgcat tgcactggac ctgggatgcc tatccaccct 420
ctggcagaag acactcacca gggttatctgt gaagagactc tgggatccca tcacctcaaa 480
gccagagggt cccaagtca ccgctgagag cacttgagcc tcaaggatgt aagcctgacc 540
ataggatctt gactccaaca gcggcaaccc ccaccccat tgtggtccgt ccttaaccca 600
tccactcttc ttcgagggca actgagaaca cataaagcaa gcagctacct agcatcccc 660
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cccaagggcg ggctggctga tggcagcatg gtgggctggc ctgggtgtgg agtgaaagag 840
tcactgtggt gggggcgaga ggaggacttg ggagctggag gtgtgacacc ttcagttctg 900
ttcctattaa aggaccttct gaagggcaaa aaaaaaan 938

<210> 98
<211> 311
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (297)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (309)
<223> n equals a,t,g, or c

<400> 98
agatggggct ggagcagcag aagcagacgg tccagatgcg cgcgagatg cccgccttcc 60
ccctgcccta cgcccaggca tgtgccatcc tcccgcacc cagaggtttg tgggctgagg 120

accaactctc accgctgtct ctttcgtccc cagctccagg ccatgcccgc agccggagggt 180
gtgctctacc agccctcggg accagccagy ttccccagca ccttcagccc ygccggctcg 240
gtggaggggt ccccaatgca cggcgtgtac atgagccagc cggtccttgc cgctgggnccc 300
taccaccagna t 311

<210> 99
<211> 620
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (368)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (570)
<223> n equals a,t,g, or c

<400> 99
actgccggtc gttcggacgt cttgcctgtc gctggaggag aggtccgggc tctccaggaa 60
ggtggctgcg gcgacaaaat gaagatattc gtgggcaacg tcgacggggc ggatacgact 120
ccggaggagc tggcagccct ctttgcgccc tacggcacgg tcatgagctg cgccgtcatg 180
aaacagttcg ccttcgtgca catgcgcgag aacgcggggc cgctgcgcgc catcgaagcc 240
ctgcacggcc acgagctgcg gccggggcgc gcgctcgtgg tggagatgtc gcgccaagg 300
cctcttaata cttggaagat tttcgtgggc aatgtgtcgg ctgcatgcac gagccaggaa 360
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<211> 2511
<212> DNA
<213> Homo sapiens

<220>
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<222> (12)
<223> n equals a,t,g, or c

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<223> n equals a,t,g, or c

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<222> (2511)

<223> n equals a,t,g, or c

<400> 100

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<210> 101

<211> 2981

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (293)

<223> n equals a,t,g, or c

<400> 101

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<210> 102

<211> 2804

<212> DNA

<213> Homo sapiens

<400> 102

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<210> 103

<211> 722

<212> DNA

<213> Homo sapiens

<400> 103

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<210> 104

<211> 1636

<212> DNA

<213> Homo sapiens

<400> 104

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<210> 105

<211> 1561

<212> DNA

<213> Homo sapiens

<400> 105

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<210> 106

<211> 486

<212> DNA

<213> Homo sapiens

<400> 106

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<210> 107

<211> 800

<212> DNA

<213> Homo sapiens

<400> 107

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gttcgtgcag gacggcatct tgctaccaa ttgaatattt tagtacagca acattttgac 120
ttggcttcaa ctactattac aaatattcca atgaagggtg ttcgcatcta ggtggcggca 180
gtcgagaagg ctcgtttaaa gaaacaataa cattaaagtg gtgtacacca aggacaaata 240
acattgaatt acactattgt actggagctt atcggatttc acctgtagat gtaaatagta 300
gaccttcctc ctgccttact aattttcttc taaatggctg ttctgtttta ttggaacaac 360
cacgaaagtc aggttctaaa gtcattagtc atatgcttag tagccatgga ggagagattt 420
ttttgcacgt ccttagcagt tctcgatcca ttctagaagr tccaccttca attagtgaag 480
gatgtggagg aagrgttaca gactaccgga ttacagattt tgggtgaattt atgagggaaa 540
acagattaac tccttttcta gaccccgat ataaaatcga tggagtcctt gaggtccctt 600
tggaacgagc aaaagatcag ttagaaaaac ataccggtta ctggcctatg gatcatttca 660
caaaccacca tttttaacak gcaagcggta gttccattag ccagtgttat tgtggaaaga 720
tcyctggaca gaggaagatg tggttwaaac ggtccaaaaa acatwtcca acttggttgg 780
ataaggggaa ggaaaaaagg

```

<210> 108

<211> 1058

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (895)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1019)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1054)

<223> n equals a,t,g, or c

<400> 108

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ggcacgagcg tgactggcgc cgaaatggga gaaagcagcg agtgagaggg gaaggggagc 60
caggcgagca cccgggagcc agcgggacct gggcaggggc gcccgagca ggccgcatgg 120
cgggccccgc gcgggatcc ggctggaaga gagcgtacac ggctcgacg agtccggggc 180
cgatgtacca ggtgagcggc cagccccctc tggctgcgac gcgcccttat ggagccccc 240
gcgcamcccc ggcccagccc agaccytaty ccttccttcc tgggctggar gtaktaacag 300
gatccactca ccctgcggag gcagcaccag aggagggtc cctggaggag gcggcaaccc 360
ccatgcccc aaggcaatggc cctggcatcc cccagggcct ggacagcact gacctcgacg 420
tccccacaga agctgtgaca tgccagcctc aggggaaccc ttgggctgca cccacttct 480
gccgaatgac tctggccacc cctcagagct gggcggcacc agacgggagg ggaatggtgc 540
cctgggtggc cccaaggccc accggaagtt gcagacacac ccattctctc ccagccaggg 600
cagcaagaag agtaagagca gcagcaaata caccacctcc cagatcccc tccaggcaca 660
ggaagactgc tgtgtccact gcacctgtc ctgcctgttc tgcgagttcc tgacgctgtg 720
caacatcgtc ctggactgcg ccacctgtgg ctctgcagc tcggaggact cgtgcctctg 780
ctgctgctgc tgtggctctg gcgagtgtgc cgactgcgac ctgccctgcg acctggactg 840
cggcatcctg gatgcctgct gcgagtcgcg ggactgcctg gaaatctgca tggantgctg 900
tggtgctctg ttctcctcct gagcctctgt cgggggctaa gccagcctgg cgcccctgca 960
gattccagca ggttccctct gagtggggcc agggccagga ctgtcacaca aggcttgana 1020
aagcccctct ccctggtcct ctctaccca ccntgtc 1058

```

<210> 109

<211> 1076

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (780)

<223> n equals a,t,g, or c

<400> 109

```

caggaggaag caggaagaaa caggaggagg aacctgagac agagccgctg aagtccttgc 60
tggaagcaga tgggattaaa tgagcgacga gactgggaga gtgccagaga gagacaccaa 120
gaggatgcag gtctgtctgc tatcagctat gccgctgccc gttgcgctgc agacccgctt 180

```

```

ggccaagaga ggcatacctca aacatctgga gcctgaacca gaggaagaga tcattgccga 240
ggactatgac gatgatcctg tggactacga ggccaccagg ttggagggcc taccaccaag 300
ctggtacaag gtgttcgacc cttcctgcgg gctcccttac tactggaatg cagacacaga 360
ccttgatatcc tggctctccc cacatgaccc caactccgtg gttaccaaatt cggccaagaa 420
gctcagaagc agtaatgcag atgctgaaga aaagttggac cggagccatg acaagtccga 480
cagggggccat gacaagtccg accgcagcca tgagaaacta gacaggggcc acgacaagtc 540
agaccggggc cacgacaagt ytgacagggg tgcagagcgt ggctatgaca aggtagacag 600
agagagagag cgagacaggg aacgggatcg ggaccgcggg tatgacaagg cagaccggga 660
agagggcaaa gaacggcgcc accatcgccg ggaggagctg gctccctatc ccaagagcaa 720
gaaggcagta agccgaaagg atgaagagtt agaccccatg gaccctagct catactcagn 780
acgcccccg ggacgtgggt caacaggact ccccaagcgg aatgaggcca agactggcgc 840
tgacaccaca gcagctgggc cctcttcca gcagcggccg tatccatccc caggggctgt 900
gctccgggcc aatgcagagg cctcccgaac caagcagcag gattgaagct tcggcctccc 960
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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa waaaaaaatt ttgggggggg cccct 1076

```

<210> 110

<211> 1199

<212> DNA

<213> Homo sapiens

<400> 110

```

gttggtggag ttctgcccgg atggaagctc cggccgcgga gtgatgggtg cctcagcgaa 60
gatgggcccg gcagggacca tggcgggtggc agcagaggtg gcagggggcg ggcggtggc 120
ggtagaggag gctgtggtcc tcaggggggt gtaggtggag gtatggctcg ggccagcagc 180
gggaacggca gcgaggaggc ctggggggca cttcgggcgc cgcaacagca gcttcgagag 240
ctgtgccag gagtgaacaa ccagccctac ctctgtgaga gtggtcactg ctgcggggag 300
actggtgctg gcacctacta ctatgagctc tgggtggttct ggctgctctg gactgtcctc 360
atcctcttta gctgctgttg cgccttcgcg caccgacgag ctaaactcag gctgcaacaa 420
cagcagcggc agcgtgaaat caacttggtg gcctatcatg gggcatgcca tggggctggt 480
cctttcccta ccggttcaact gcttgacctt cgcttcctca gcacctcaa gccccagcc 540
tacgaggatg tggttcaccg cccaggcaca ccaccccccc cttatactgt ggccccaggc 600
cgccccttga ctgcttccag tgaacaaacc tgctgttcct cctcatccag ctgccctgcc 660
cactttgaag gaacaaatgt ggaagggtgt tcctcccacc agagtgcccc cctcatcag 720
gagggtgagc ccggggcagg ggtgaccctt gcctccacac cccctcctg ccgctatcgc 780
cgtttaactg gcgactccgg tattgagctc tgcccttgct ctgcctccgg tgagggtgag 840
ccagtcaagg aggtgagggt tagtgccacc ctgccagatc tggaggacta ctccccgtgt 900
gcactacccc cagagtctgt accgcagatc tttcccatgg ggctgtcttc cagtgaaggg 960
gacatcccat aagtagtttt gagaggggtg atgggttact tgcccaccag aaacagccct 1020
agtcccaact ccttgcgttc ctttgggccc tccttgccca cctagaatct gcctgaaagg 1080
gctggagagg ggcagtattg ggggactgtg ctagctttac ccccgagga catacacagg 1140
agcctttgat ctcatataag agatgtgaac cagctaaaaa aaaaaaaaaa aaactcgag 1199

```

<210> 111

<211> 3630

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (3606)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (3608)

<223> n equals a,t,g, or c

<400> 111

```
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tgtggaccgc ggacgtcgct gggacagccc ctccccgctg ctcggcggcg gcacctggcc 120
cggccgctcc tcgctgcgct tcgcctccgc ctctcggac tcggaactcg gtttatatcg 180
cgctcactt catcccagtc ccgggcgagc agcggtgggt ttatgtcttt atttgacgaa 240
aacgacagaa gatacaaaaa agttgcaatc aaagatctct tcatcttatt gataaagcca 300
ctaataagcc aaaatgtctg tcaatgtcaa ccgcagcgtg tcagaccagt tctatcgcta 360
caagatgccc cgtctgattg ccaaggttga gggcaaaggc aatggaatca agacagttat 420
agtcaacatg gttgacgttg caaaggcgct taatcggcct ccaacgtatc ccaccaata 480
ttttggttgt gagctgggag cacagacca gtttgatgtt aagaatgacc gttacattgt 540
caatggatct catgaggcga ataagctgca agacatgttg gatggattca ttaaaaaatt 600
tgttctctgt cctgaatgtg agaatcctga aacagatttg catgtcaatc caaagaagca 660
aacaataggt aattcttgta aagcctgtgg ctatcgaggc atgcttgaca cacatcataa 720
actctgcaca ttcatcttca aaaaccacc tgagaatagt gacagtggta caggaaagaa 780
agaaaaagaa aagaaaaaca gaaagggcaa agacaaggaa aatggctccg tatccagcag 840
tgagacacca ccaccaccac caccaccaa tgaaattaat cctcctccac atacaatgga 900
agaagaggag gatgatgact ggggagaaga tacaactgag gaagctcaaa ggcgtcgaat 960
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tgattcatct gacaaagaaa tcgttgctga agcagaaaaga ctggatgtaa aagccatggg 1140
ccctcttggt ctaactgaag ttctttttta tgagaagatt agagaacaga ttaagaaata 1200
caggcgccat ttctacgat tttgtcacia caacaaaaaa gcccaacggt accttcttca 1260
tggtttggag tgtgtggtag caatgcatca agctcagctt atctccaaga ttccacatat 1320
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aaaggcctct aagaaatatg tctccaaaga acttgccaaa gagattcgtg tcaaagcaga 1440
accatttata aaatgggtga aggaggcaga ggaagaatct tctgggtggcg aagaagaaga 1500
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caacctagct taacagtata atgctgcaaa ttttctcca ttatcagcca gaagtgcaac 1680
atgtatgtgc aaaagctaaa atggcttaac atcatgctac actttacact aaaaatctat 1740
tactgtgagt ggtctgttat taagcccaat gagacatcta gggagtccat acacatcagt 1800
gagcagatgt agtttgctta tttatagcat gtttcttttt gaaaaactag tgggtggacac 1860
at ttggatca catttataca gttataaaaa taaagggttg attttggtcg ttcttcagat 1920
gtttggctct gaatgactta agctgaagta actggctcct tactttaaat gttctgccat 1980
catttcacct gatgagcatt cttggagcct gccagatatt gttaggtcct ggggctgcaa 2040
agaggctctc aacaggatgt aaagcaaact taattgtaat taatttatc agcccattaa 2100
gaaagtacta aagttttatc tctgtagttc ctcaaattgg catctggtaa tgtacattgt 2160
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ttaactagca acctaagcat gatttttcag tttttgccct tagggtttaa attacaattc 2520
caaaatgtta gacatactgt attttttcgt tcagtgtggc ttttaattttc ccctcttgca 2580
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```

gtttgttctg taatgccttt tacatttgga cacatagttt atscctttttt ttgggtgtaag 2640
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acctgagtgc aggtgacaag gacctgacag agcccatgca gggctttaga tttggacaca 2760
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gttcacaggt tatcctaata gagtaattct tcactttgct ctattgaact gtcttaagga 3540
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```

<210> 112

<211> 1526

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1496)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1511)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1512)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1515)

<223> n equals a,t,g, or c

<400> 112

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tcttgaggct atcagatcgg tatggcattg gcgtccgggc ccgcaaggcg ggcgctagct 120
ggctccgggc agctcggcct tgggggcttc ggggccccga gacgcggggc gtatgagtgg 180
ggcgtgcgct ccacgcggaa gtcggagcct cctcccctgg ataggggtgta cgagatccct 240
ggactggagc ccatcacctt tgcggggaag atgcacttcg tgccctggct ggcgcggccg 300
atctttccgc cctgggaccg cggctacaag gacccaaggt tctaccgctc gccccctctt 360

```

```

cacgagcatc cgctgtacaa agaccaggcc tgctatatct ttcaccaccg ttgccgcctt 420
ctcgaggggtg taaagcaggc cctctggctc accaagacca agttaataga aggccttccc 480
gagaaagtgc ttagccttgt tgatgatcca aggaaccaca tagagaacca agacgagtgc 540
gttctgaatg tgatctctca cgcccgtctc tggcagacca ctgaggaaat cccaagaga 600
gagacctact gcccggtcat cgtggacaac ctaatacagc tgtgtaaate tcagattctc 660
aagcatcctt ctctggccag gaggatctgt gtccaaaact ccacgttttc tgctacctgg 720
aaccgagagt ctcttctcct tcaagtccgt gggtctgggt gagcccgact gagcactaag 780
gatcctctgc ccaccatcgc ctccagagag gagattgaag ctactaagaa tcatgttcta 840
gagaccttct accccatcgc acccatcctc gatcttctat aatgcaatat ttatgatgtg 900
aaaaatgaca caggattcca ggaaggctat ccttaccctt atccccatac cctgtactta 960
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atcctgtttg cttttggcag tgccctggct caggcccggc tcctctatgg gaatgatgcc 1080
aaggtcttgg agcagcccggt ggtggtgcag agcgtgggca cggatggacg tgccttccat 1140
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gcctgggtgg actcagacca gctcctctat cagcattttt ggtgtctccc agtgatcaaa 1260
aagagagtgg ttgtggaacc tgttggccca gttggtttca agccagagac attcagaaag 1320
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ccctcttgcc tctcttccac ggaagaggcc tgggccccgt ggagcctcag tgcccgtttg 1440
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ggccgctcaa nngncccaa gttagt 1526

```

<210> 113

<211> 585

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (422)

<223> n equals a,t,g, or c

<400> 113

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tggtgttgg attaggagat ctgcacatcc cacaccgggt caacagtgtt ccagctaaat 120
tcaaaaaact cctgggtgcc ggaaaaatc agcacattct ctgcacagga aacctttgca 180
ccaaagagag ttatgactat ctcaagactc tggctggtga tgttcatatt gtgagaggag 240
acttcgatga gaatctgaat tatccagaac agaaagtgtg gactgttgga cagttcaaaa 300
ttggtctgat ccatggacat caagtatttc catggggaga tatggccagc ttagccctgt 360
tgagaggca atttgatgtg gacattctta tctygggaca cacacacaaa tttgaagcat 420
tngagcatga aaataaattc tacattaatc caggttctgc cactggggca tataatgcct 480
tggaacaaa cattattyca tcattgtgtt gatggatc caggcttcta cagtggkcac 540
ctatgtgtaa tcagctaatt ggagatgaag tgaaagtaga acgga 585

```

<210> 114

<211> 501

<212> DNA

<213> Homo sapiens

<400> 114

```

gatgaaaaga aggttttttg tcttcaaatt cttaagtaaa ctaaaaggca gagctggaaa 60
taaagcccgt attgtggact ccaagtaatg ctctttctgc tacaccatac tttgtgggtg 120

```

```

ctgctcccat gtgcttcttc gctaaggctg atcaaaaaag ttagtagggt gcttcagcta 180
taagaatttg atggtcttcc ttagtcatca tagtctgcag caatcatttt tgttcatcat 240
tgggatgtct gcttactcct gttgagtaaa tgtgatctat tcacccttgg ragctccttg 300
cacaccaaca gtattcttgg atagggacaa gtgttgctta agtcagtgc gatttcttta 360
gcataataaa aggctccatg taggatgcta atacttgagt gaaatatgct tcataagcag 420
ccttgttttg acagagttgg tgtaaagtga gggtatgtct tggcctgagc gtcttcaaag 480
catgtgccac tttgtgcatc t 501

```

<210> 115

<211> 1965

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (338)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (343)

<223> n equals a,t,g, or c

<400> 115

```

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tatcccttga agccggggccc cgcgtcccag mcctggccca aaggcaggag cagcagacaa 120
gagtgcagtg gtggctgccg ccgcaccagc ctcaagtggca gatgacacac cccccccga 180
gcgtcggaa aagagcggta tcatcagtga gcccctcaac aagagcctgc gccgctccc 240
cccgtctcc cactactctt cttttggcag cagtgggtgt agtggcgggt gcagcatgat 300
gggcggagag tctgctgaca aggccactgc ggctgcanc tgnccctcct gttggccaat 360
gggcatgacc tggcggcggc catggcgggt gacaaaagca accctacct aaagcacaaa 420
agtggtgctg tggccagcct gctgagcaag gcagagcggg ccacggagct ggcagccgag 480
ggacagctga cgctgcagca gtttgcgag tccacagaga tgctgaagcg cgtggtgcag 540
gagcatctcc cgctgatgag cgaggcgggt gctggcctgc ctgacatgga ggctgtggca 600
ggtgccgaag cctcaatgg ccagtccgac ttcccctacc tgggcgcttt ccccatcaac 660
ccaggcctct tcatatgac ccggcagggt gtgttccttg ccgagagcgc gctgcacatg 720
gcgggccttg ctgagtaccc catgcaggga gagctggcct ctgccatcag ctccggcaag 780
aagaagcgg aacgctgcgg catgtgcgg ccctgccggc ggcgcacaa ctgcgagcag 840
tgcagcagtt gtaggaatcg aaagactggc catcagattt gcaaattcag aaaatgtgag 900
gaactcaaaa agaagccttc cgctgctctg gagaaggtag tgcttccgac gggagccgcc 960
ttccggtggt ttcagtgcag gcggcgggaa ccaaagctgc cctctccgtg caatgtcact 1020
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acaaaaata ttctctcaca gatttcattc ctgtttttat atatatattt tttgtgtcgc 1140
ttttaacatc tccagctccc tagcataaaa agaaaaagaa aaaaatttaa actgcttttt 1200
cggaagaaca acaacaaaaa agaggtaaa acgaatctat aaagtaccga gacttcctgg 1260
gcaaagaatg gacaatcagt ttccttcctg tgcgatgtc gatgtgtct gtgcaggaga 1320
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agcactactg taatttagca cagtttaact ccacctcat ttaaacttcc tttgattctt 1440
tccgaccatg aaatagtgc tagtttgcc ggagaatcca ctcacgttca taaagagaat 1500
gttgatggcg ccgtgtagaa gccgtctgt atccatccac gcgtgcagag ctgccagcag 1560
ggagctcaca gaaggggagg gagcaccagg ccagctgagc tgcaccaca gtcccagac 1620

```



```

tgggatcccc caccccaaca gtgatttttg aaaaaaaaaat gaaagttctg ttcgtttatc 1680
cattgcgatc tggggagccc catctcgata tttccaatcc tggtacttt tcttagagaa 1740
aataagtcct ttttttcttg ccttgcta at ggcaacagaa gaaagggctt ctttgcgtgg 1800
tcccctgctg gtgggggttg tccccagggg cccctgcgc ctgggcccc ctscacggc 1860
cagcttcctg ctgatgaaca tgctgtttgt attgttttag gaaaccaggc tgttttgtga 1920
ataaaacgaa tgcattgttg tgtcacgaar maaaaaaaaa aaaaa 1965

```

<210> 116

<211> 1060

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (299)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1060)

<223> n equals a,t,g, or c

<400> 116

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gaaacacata cattggatat gggaagatgg cggctgtgtc ggtgtatgct ccaccagttg 60
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gggatacaag cttccaaagg yccggaaaac tggcacgacc atcgtctggg tggctctataa 180
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cactggccgt cttcccagag ttgtgacagc caatcggatg ctgaagcaga tgcttttcag 420
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tggtccttg gcagcaatgg ctgtatttga agataagttt aggccagaca tggaggagga 600
ggaagccaag aatctggtga gccaagccat cgcagctggc atcttcaacg acctgggctc 660
cggaagcaac attgacctct gcgtcatcag caagaacaag ctggattttc tccgcccata 720
cacagtggc aacaagaagg ggaccaggct tggccggtac aggtgtgaga aagggaactac 780
tgagtcctc actgagaaaa tcaactcctc ggagattgag gtgctggaag aaacagtcca 840
aacaatggac acttcctgaa tggcatcagt ggggtggctg cgcggttct ggaagggtgt 900
gagcattgag gccagtaag aactcatgt ggctagtgtt tgccgaatga aactcaactc 960
aataaaaaac aaaaaccaa ttgggcagct gaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1020
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1060

```

<210> 117

<211> 709

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (174)

<223> n equals a,t,g, or c

<400> 117

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aattcggcac gagaacatcc attctaaagg gctactgtcc caaatcctgt gtgtcctttt 60
gacttgctctg atcacccaat ggaagtggat acttgtaaag tctacaccac tgtacttggc 120
gttaaattctt gctgaattcg tggtaagctg ttaccatgtc tacattttgt agantgattt 180
tggctctgcag caaaattcga tttcacttct catacccctt tccttccact tgaaatgcaa 240
tttagacaga ggccctgtgg tgaaagttgc aatattaagt ttmcctttag aagatcccyt 300
cctcaaacct cagaacctct agcagtgtta ccctwaaaca aaaatgagct cgagaaaaaa 360
gtagctcagt tacagagaag caaatcgagt tatttcccca cataaaaagt ttcccagat 420
tctaagaatt gcagtatcct gtaccctaaa atttttcaag gtgactcctg ttgtcgtctg 480
ttgataactt taataaaggc catttaagga cataagtttt taaagactcc caaagtgaaa 540
cttaaacatt ttcgggagta tcgattgcat atatcagttt atgctgtgtg ctgaattact 600
atgccatgtg ctatttttagt gtttggggaa aatgaaaaat aaaatttgtt ctttagctta 660
ataaatatgt cttattttta aaaaaaaaaa aaaaaactcg agactagct 709

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<210> 118

<211> 2053

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (813)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2049)

<223> n equals a,t,g, or c

<400> 118

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ctccttgggcg cctgtcccca cggccccgc agcgtgacca cgatgctccc cataccccac 60
ccattccccga tacaccttac ttactgtgtg ttggcccagc cagagtgagg aaggagtttg 120
gccacattgg agatggcggg actgagcaga catgccccca cgagtagcct gactccctgg 180
tgtgtcctcg gaaggaagat cttggggacc cccccaccgg agcacaccka rggatcatct 240
ttgcccgtct cctggggacc cccaagaaa tgtggagtcc tcggggggccg tgcaactgat 300
cggggagtggt gggaagtctg gcggttggar ggggtgggtgg ggggcagtgg gggctgggcg 360
gggggagttc tggggtagga agtgggtccc ggagattttg gatggaaaag tcaggaggat 420
tgacagcaga cttgcagaat tacatagaga aattaggaac ccccaaattt catgtcaatt 480
gatctattcc ccctctttgt ttcttggggc atttttcctt tttttttttt ttttgttttt 540
tttttaccoc tccttagctt tatgcgtca gaaaccaa taaaccccc ccccatgtaa 600
cagggggggca gtgacaaaag caagaacgca cgaagccagc ctggagacca ccacgtcctg 660
ccccccgcca tttatcgccc tgattggatt ttgtttttca tctgtccctg ttgcttgggt 720
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aggggagtggt agaagggcac tgtccggcct ggnctctggg gacagtggct ggtcccaga 840
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ggaaccctcc cctctccctc ggtgacatct tgcccggccc tcagcaccct gccttgtctc 1080
caggaggtcc gaagctctgt gggacctctt gggggcaagg tggggtgagg ccggggagta 1140
gggaggtcag gcgggtctga gcccacagag caggagagct gccaggtctg cccatcgacc 1200

```

```

aggttgcttg ggccccggag cccacgggtc tggatgatgcc atagcagcca ccaccgcggc 1260
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ccagctcage cccctgcac gcagcccgac tagcagtcta gaggcctgag gcttctgggt 1380
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gagccaaatt gtcacaattg tggaaccac attggcctga gatccaaaac gcttcgaggg 1560
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gccggagtgg gtgttcccgg gggcacttgc cgaccagccc cttgcgtccc caggtttgca 1680
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cttgggtccc ctctctgccc atcacctgaa gacccccacg ccaaacactg aatgtcacct 1860
gtgcctgccg cctcgggtcca cttgcggccc gtgtttgact caactcagct cctttaacgc 1920
taatatttcc ggcaaaatcc catgcttggg ttttgtcttt aaccttgtaa cgcttgcaat 1980
cccaataaag catataaagt catraaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2040
ggggggggnc cgg                                     2053

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<210> 119

<211> 1824

<212> DNA

<213> Homo sapiens

<400> 119

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caacatcttt agaaactcag gatgacgata acataagact gaaggaaaat acttttacca 120
tagaaaatga aaagtgttaa aatagcattt gctgttactc tggagacagt gctagccggg 180
catgaaaact gggtaaatgc agttcactgg caacctgtgt tttacaaaga tgggtgtccta 240
cagcagccag tgagattatt atctgcttcc atggataaaa ccatgattct ctgggctcca 300
gatgaagagt caggagtttg gctagaacag gttcgagtag gtgaagtagg tgggaataact 360
ttgggatttt atgattgcca gttcaatgaa gatggctcca tgatcattgc tcatgctttc 420
cacggagcgt tgcacctttg gaaacagaat acagttaacc caagagagtg gactccagag 480
attgtcattt caggacactt tgatggtgtc caagacctag tctgggatcc agaaggagaa 540
tttattatca ctgttggtac tgatcagaca actagacttt ttgctccatg gaagagaaaa 600
gaccaatcac aggtgacttg gcatgaaatt gcaaggcctc agatacatgg gtatgacctg 660
aaatgttttg caatgattaa tcgggtttcag tttgtatctg gagcagatga aaaagttctt 720
cgggtttttt ctgcacctcg gaattttgtg gaaaattttt gtgccattac aggacaatca 780
ctgaatcatg tgctctgtaa tcaagatagt gatcttccag aaggagccac tgtccctgca 840
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aagtatttct tcaactggag tgcagacaaa aagtggtgtt tctggggtga gtgtgactcc 1440
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gtaggattgg agtgtggaaa gatttgctta tatacctgga aaaagactga tcaagttcca 1620
gaaataaatg actggaccca ctgtgtagaa acaagtcaaa gccaaagtca tacactggct 1680
atcagaaaat tatgttgtaa gaattgcagt ggaaaaactg aacagaagga agcagaaggt 1740

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gctgagtggg tacactttgc aagctgtggg gaagatcaca ctgtgaagat acacagagtc 1800
 aataaatgtg cactgtaatg gaaa 1824

<210> 120
 <211> 606
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc feature
 <222> (144)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (155)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (598)
 <223> n equals a,t,g, or c

<400> 120
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 ctatttgcag cttttcctca attnacattt tggtngtata cttcagagtg atgttatcta 180
 agtttaagta gttaagtat gttaaagtgt gatcttttac accacatcac agtgaacaca 240
 ctggggagat gtgctttttt ggaaaactca aagggtgctag ctccctgatt caaagaaata 300
 tttctcatgt ttgttcattc tagtttatat tttcatttaa aatcctttag gttaagttaa 360
 agctttttta aagttagtta aaagaattga gacacaatac taatactgta ggaattgggtg 420
 aggccttgac ttaaaacttt ctttgtactg tgatttcctt ttgggtgtat tttgctaagt 480
 gaaacttggt aaattttttg ttaactaaat ttttttctta aaataaagac tttttcacaa 540
 wraaaaaaaaa aaaaaaaaaa actcgagggg gggcccgtag ccaatcgcct gtgatgtntc 600
 gtatac 606

<210> 121
 <211> 838
 <212> DNA
 <213> Homo sapiens

<400> 121
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 gccaccatct tgcgtggtgg cagcgaggat gctcttctgc agcagctggc ggactcgatg 180
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 tccagtgtga atcgccccg aattgacctg atcgtgtttg tggttaatct tcacagcaaa 300
 tacagyctcc agaacacaga ggagtccctg cgccatgtgg atgccagctt cttcttgggg 360
 aargtgtgtt tcctcgccac aggtgggtggm rggctttagg gccaccatgg cgcarcgcct 420
 ggtgcgcgtg ctgcagatct gtgctggcca cgtgccgggt gtctcagctc tgaacctgct 480
 gtccctgctg agaagctctg agggccctc cctggaggac ctgtgagggg ggctkgcccc 540

tgggctgccc cttctcatgg cttcgtgctg actccataaa cattctctgt tgaggatgtc 600
cagtcagggc ttgacaggcc caggctcagc cccccgtggc tgggaagggt ccctgcagtg 660
ccagtgtgtc agcagggaga gctgggcaga agcagcgagg gggcccagct ggcgagactg 720
tagccccctc ccactccac actcactctt gcagagcctg tgtctttaag cagctggcgt 780
gttacatctc catttaagggt ttcctttgaa caaaagggtc gtggctaaaa aaagttta 838

<210> 122

<211> 656

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (41)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (218)

<223> n equals a,t,g, or c

<400> 122

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gcgccggagc cggggccgct tggagctcgt gtgggggtctc cgggccaggc gcgggcatgg 120
gcgtcctggc cgcagcggcg cgctgcctgg tccgggggtgc ggaccgaatg agcaagtgga 180
cgagcaagcg gggcccgcgc agcttcaggc gccgcaangg ccggggcgcc aagggcatcg 240
gcttcctcac ctcgggctgg aggttcgtgc agatcaagga gatgggtccc gagttcgtcg 300
tcccggtatc gaccggcttc aagctcaagc cctacgtgag ctacctcgcc cctgagagcg 360
aggagacgcc cctgacggcc gcgcagctct tcagcgaagc cgtggcgccct gccatcgaaa 420
aggacttcaa ggacggtacc ttcgacctg acaacctgga aaagtacggc ttcgagccca 480
cacaggaggg aaagctcttc cagctctacc ccaggaactt cctgcgctag ctgggcgggg 540
gaggggagcg ctgccctcat ctcatctcta ttaaagcgtt ttgccagcta aaaaaaaaaa 600
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaggggggg gggcggacgc gtgggc 656

<210> 123

<211> 1386

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (8)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1283)

<223> n equals a,t,g, or c

<400> 123

aaccgggnaa aaggaaaccg tgttgtgtac gtaagattca ggaaacgaaa ccaggagccg 60

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cgggtgttg cgc aaagggtt actcccagac ccttttccgg ctgacttctg agaaggttgc 120
gcacagctgt gccccgcagt ctagaggcgc agaagaggaa gccatcgctt gcccccggt 180
ctctggacct tgtctcgctc gggagcggaa acagcggcag ccagagaact gttttaatca 240
tgacaaaca aaactcacag atgaatgctt ctcacccgga aacaaacttg ccagttgggt 300
atcctcctca gtatccaccg acagcattcc aaggacctcc aggatatagt ggctaccctg 360
ggccccaggt cagctaccca cccccaccag ccggccattc aggtcctggc ccagctgggt 420
ttcctgtccc aaatcagcca gtgtataatc agccagtata taatcagcca gttggagctg 480
caggggtacc atggatgcca gcgccacagc ctccattaaa ctgtccacct ggattagaat 540
atttaagtca gatagatcag atactgattc atcagcaa at tgaacttctg gaagtttta 600
caggttttga aactaataac aaatatgaaa ttaagaacag ctttggacag agggtttact 660
ttgcagcggg agatactgat tgctgtaccg gaaattgctg tgggccatct agacctttta 720
ccttgaggat tattgataat atgggtcaag aagtcataac tctggagaga ccactaagat 780
gtagcagctg ttgttgtccc tgctgccttc agggagataga aatccaagct cctcctgggtg 840
taccaatagg ttatgttatt cagacttggc acccatgtct accaaagttt acaattcaaa 900
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gagatgttga ttttgagatt aaatctcttg atgaacagtg tgtggttggc aaaatttcca 1020
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ttagtgaag tctcctcagg aaatctgaag tctgtatatt gattgagact atctaaactc 1260
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cattgg 1386

```

<210> 124

<211> 845

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (823)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (825)

<223> n equals a,t,g, or c

<400> 124

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gccggggcag acgtccgtag cgtccccctc cgaggaggtc gagccgggca gtgggggtccg 120
catcgtggtg gagtactgtg aacctgctcg ctctgaggcg acctacctgg agctggccag 180
tgctgtgaag gagcagatc cgggcacatc gatcgagtcg cgcctcgggg gcacaggtg 240
ctttgagata gagataaatg gacagctggg gttctccaag ctggagaatg ggggctttcc 300
ctatgagaaa gatctcattg aggccatccg aagagccagt aatggagaaa ccctagaaaa 360
gatcaccaac agccgtcctc cctgcgtcat cctgtgactg cacaggactc tgggttcctg 420
ctctgttctg ggttccaaac cttgggtctc ctttggctct gctgggagct cccctgcct 480
ctttccccta cttagctcct tagcaaagag accctggcct ccactttgcc ctttgggtac 540
aaagaaggaa tagaagattc cgtggccttg ggggcaggag agagacactc tccatgaaca 600
cttctccagc cacctcatat ccccttccca gggtaagtgc ccacgaaagc ccagtccact 660

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cttcgcctcg gtaatacctg tctgatgcc cagattttat ttattctccc ctaaccacagg 720
gcaatgtcag ctattggcag taaagtggcg ctacaaacac taaaaaaaaa aaaaaaaaaa 780
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa atntnggggg ggggcccccc 840
cccccc 845

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<210> 125

<211> 1656

<212> DNA

<213> Homo sapiens

<400> 125

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ctcaccgccc ggactctcca ctgttcaact cgagatgcag ctctccactc cagctcaatc 120
tgctgcagct ggaggagctc ccccgctgctg agggggctgc tgttgaggga ggccctggga 180
gcagtgcggg gccccacact cccartgcgg aggctgctga gccagaggcc agactggcgg 240
aggtcactga gtcctccaat caggacgcac tttccggctc cagtgcactg ctcgaaactc 300
tgctgcaaga rgactcgcgc tccggcacag gctccgcagc ctccgggctcc ttgggctctg 360
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ctcgcagcag ccagagcagc cacacaagca aatactttgg cagcatcgac tcttccgagg 480
ctgaggctgg ggctgctcgg ggccgggctg agcctgggga ccagggtgatt aagtacgtgc 540
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cctgggtccg gaagggccaa ctgcctcggg ctcttgatgt gatggcctgt gtggactgtg 780
ggagcagcac ccaagatcct ggtcaccctg atgaccact cttctcagag ctggatggac 840
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gtgagggaga gggctgcrag gagggccaa ggcgggccaa ggcttcaagc tctcaggact 960
tggttatgga ggaggaggaa gaaggcagga gctcatccag tccagcctta cctacagcag 1020
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ctctgccgat ggcatttggt tttttgatat ttgtgtctgt tactactttt ttaatacaaa 1620
aagataaaaa cgcccaaaaa aaaaaaaaaa aaaacc 1656

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<210> 126

<211> 837

<212> DNA

<213> Homo sapiens

<400> 126

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tgagcgttg ccctgtttgc tttttataaa ccaaactcta tctgaaatcc caacaaaaaa 60
aatttaactc catatgtggt cctcttggtc taatcttgct aaccagtgc agtgaccgac 120
aaaattccag ttattttatt ccaaaatggt tggaaacagt ataatttgac aaagaaaaat 180
gatacttctc tttttttgct gttccaccaa atacaattca aatgcttttt gttttatttt 240
tttaccaatt ccaatttcaa aatgtctcaa tgggtgctata ataaataaac ttcaaacactc 300

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tttatgataa caacactgtg ttatattctt tgaatcctag cccatctgca gagcaatgac 360
tgtgtctcacc agtaaaagat aacctttctt tctgaaatag tcaaatacga aattagaaaa 420
gccctcccta ttttaactac ctcaactggg cagaaacaca gattgtattc tatgagtcctc 480
agaagatgaa aaaaaatttta tacgttgata aaacttataa atttcattga ttaatctcct 540
ggaagattgg tttaaaaaga aaagtgtaat gcaagaattt aaagaaatat ttttaaagcc 600
acaattatth taatattgga tatcaactgc ttgtaaagggt gctcctcttt tttcttgtca 660
ttgtcgtgca agattactaa tatttgggaa ggctttaaag acgcatgtta tgggtgcta 720
gtactttcac ttttaaactc tagatcagaa ttgttgactt gcattcagaa cataaatgca 780
caaaatctgt acatgtctcc catcagaaaag attcattggc atgccacagg ggattct 837

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<210> 127

<211> 1217

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1168)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1169)

<223> n equals a,t,g, or c

<400> 127

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ttccgcagtt cgaagcccag ttgggcccag caggtggagg aggaggggga ggacgacaaa 180
tgtgtcacca gcgagctcct caaggggatc cctctggcca caggtgacac cagcccagag 240
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aagacagtga cagagtacaa gatagatgag gatggcaaga agttcaagat tgtccgcacc 360
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ttcgggaact cagagtttga ccccccgga cccaatgtgg ccaccaccac tgtcagtgc 480
gatgtctcta tgacgttcat caccagcaaa gaggacctga actgccagga ggaggaggac 540
cctatgaaca aactcaaggg ccagaagatc gtgtcctgcc gcatctgcaa gggcgaccac 600
tggaaccacc gctgccccta caaggatacg ctggggccca tgcagaagga gctggccgag 660
cagctgggcc tgtctactgg cgagaaggag aagctgccgg gagagctaga gccggtgcag 720
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cgcggggagt ccatgcagcc caaccgcaga gccgacgaca acgccaccat ccgtgtcacc 840
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cactgtgtac tcgggtccggg acccttggcg acagaagaca gcctccgaga gcgcgggctc 1140
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cgcatctag aactagc 1217

```

<210> 128

<211> 1349

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (57)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1133)

<223> n equals a,t,g, or c

<400> 128

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gctgaggaca tgacatccaa agattactac ttgactcct acgcacactt tggcatccac 180
gaggagatgc tgaaggacga ggtgcgcacc ctcacttacc gcaactccat gtttcataac 240
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atgtttgctg ccaaggccgg ggcccgcgaag gtcacgcggg tcgagtgttc cagtatctct 360
gattatgcgg tgaagatcgt caaagccaac aagtttagacc acgtggtgac catcatcaag 420
gggaaggttg aggaggtgga gctcccagtg gagaaggttg acatcatcat cagcgagtgg 480
atgggctact gcctcttcta cgagtccatg ctcaacaccg tgctctatgc ccgggacaag 540
tggctggcgc ccgatggcct catcttccca gaccgggcca cgctgtatgt gacggccatc 600
gaggaccggc agtacaaaga ctacaagatc cactggtggg agaacgtgta tggcttcgac 660
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cagctggtca ccaacgcctg cctcataaag gaggtggaca tctataccgt caaggtggaa 780
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gggttttagg ggccctgggct ggggggatgg ggagggcaca tcgtgactgt gtttttcata 1260
acttatgttt ttatatgggt gcatttacgc caataaatcc tgcagctggg aaaaaaaaaa 1320
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa                                     1349

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<210> 129

<211> 2318

<212> DNA

<213> Homo sapiens

<400> 129

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tgcgcacgga cgtgctcgag tttcctctgc tctccgctct cggccgctag ctctcctccc 60
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gcacggctcc gggtagccat ggaggaccce acgctctata ttgtcgagcg gccgcttccc 180
gggtaccccc acgccgaggg cccggagcct tcctccgctg gggctcaggc agcggaggag 240
ccgtcggggg ccggctcaga agagctgatc aagtcggacc aggtgaacgg cgtgctgggtg 300
ctgagcctcc tggacaaaat catcggggcc gtagaccaga tccagctgac tcaagcacag 360
ctggaggagc ggcaggcgga gatggagggc gcagtgcaga gcatccaggg cgagctgagc 420
aagctgggca aggcgcacgc accacgagca atacggtgag caagctgctg gagaaggtgc 480

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gcaaggtcag cgtcaacgtg aagaccgtgc ggggcagcct ggagcgccag gcggggcaga 540
tcaagaagct ggaggtcaac gaggccgagc tgctkcggcg ccgcaacttt aaagtcatga 600
tctaccagga tgaagtgaag ctgccggcca aactgagcat cagcaaactg ctgaaagagt 660
cggaggcgct gccagagaag gagggcgagg agctgggcga gggcgagcgg cccaggagga 720
cgcagcggcg ctgsagcttt cgtcggacga ggcgggtggag gttgaggagg ttattgagga 780
gtcccgcgca gagcgtatca agcgcgrgcc ctgcggcgcg tggacgactt caagaaggcc 840
ttctccaagg agaagatgga gaagaccaag gtgcgtacyc gcgagaacct ggagaagacg 900
cgctcaaga ccaaggaaaa cctggagaag acgcggcaca ccctggagaa gcgcatgaac 960
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gccgaggtgg gcggtwcacc tgaagtcagg agttcgggac cagcctggca aacaccccat 2160
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ggaggtggga ggttgacgtt gagccaaggt tcgcgaca 2318

<210> 130

<211> 2149

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (787)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (819)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1518)

<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (2116)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (2147)
<223> n equals a,t,g, or c

<400> 130

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ccacgcgtcc ggagaaggca gacgcatccc gaactcgctg gaggacaagg ctacgtcttt 120
gccaggccaa attgagacat gtctgacaca agcgagagtg gtgcaggtct aactcgcttc 180
caggctgaag cttcagaaaa ggacagtagc tcgatgatgc agactctgtt gacagtgacc 240
cagaatgtgg aggtcccaga gacaccgaag cctcaaaggc actggagggtc tcagaggatg 300
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ctcgggaggc acctgccacc caggcctcrt ctactactca gctgactgat acccaggttc 420
tggcagctga aaacaagagt ctagcagctg acaccaagaa acagaatgct gaccgcagc 480
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cgtagagctg ccaagctcca gtcaccccaa gagcctgaag caccaccacc tcgggatgtg 960
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aagattccca tcaagcgctc ggacatgctg aaggacatca tcaaagaata cactgatgtg 1080
taccgccaaa tcattgaacg agcaggctat tcyttggaga aggtatttgg gattcaattg 1140
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gcaggcatac tgggaacgac taaggactca cccaagctgg gtctgctcat ggtgcttctt 1260
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tcaagtttgc ctgcaagnta caaaagaagg atcccaagga atgggcagct cagtaccgag 1560
aggcgatgga agcrgatttg aaggctgcag ctgaggctgc agctgaagcc aaggctaggg 1620
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acagtgccag tgccagtgcc agcaccagtg gtggcttcag tgctggtgcc agcctgaccg 1860
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aaaaaaaaa actcgnngggg gggcccggta cccaattggc ccatagnng 2149
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<210> 131
<211> 1020

<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (11)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1019)
<223> n equals a,t,g, or c

<400> 131
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gggtggttagt ttctgcgact tgtgttgga ctgctgatag gaagatgtct tcaggaaatg 120
ctaaaattgg gcaccctgcc cccaacttca aagccacagc tggtatgcca gatggtcagt 180
ttaaagatat cagcctgtct gactacaaaag gaaaatatgt tgtgttcttc tttaccctc 240
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cagacccgaa gcgcaccatt gctcaggatt atggggtctt aaaggctgat gaaggcatct 480
cgttcagggg cctttttatc attgatgata agggatttct tcggcagatc actgtaaagt 540
acctccctgt tggccgctct gtggatgaga ctttgagact agttcaggcc ttccagttca 600
ctgacaaaaca tggggaagtg tgcccagctg gctggaaacc tggcagtgat accatcaagc 660
ctgatgtcca aaagagcaaa gaatatctt ccaagcagaa gtgagcgctg ggctgtttta 720
gtgccaggct gcggtgggca gccatgagaa caaacctct tctgtatttt tttttccat 780
tagtaaaaca caagacttca gattcagccg aattgtggtg tcttacaagg caggccttcc 840
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<210> 132
<211> 2319
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (10)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (2246)
<223> n equals a,t,g, or c

<400> 132
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ttgggggtgg gggcgggcca gcactcactg tttgcttccc caggccagct ggaggtgatc 120
ttgggaccgg cggtgatgc aggatgacaa ccggggccta ggccaagggc tcaaggacaa 180

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caagagaacc tgcaaccgtt tccgcctcct gctagagcgg cgaaccrtgg gcagtgaagt 240
ccaagatagc cactctacca gctacccatc cctcctcagc cacctgacct ccatgtacct 300
gaacgccccg gcgctcgctc tgcctgtagc caggatgcag ctcccaggcc ctggctctgcg 360
ctcattttcat cctctggctt cctcactgcc ctgtgacttc cacctgctca acctacgtac 420
gctccaggct gaggaggaca ccctaccctc ggcggagacc gcaactcatct tacaccgcaa 480
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taagaatcaa ctgaagacct gttaagagta ttctgtaagt caacccaatg atacacatca 2160
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gagatgaaac tttggaattg acagtnctaa agtgcattgg gagagtgaat gtgtgagaac 2280
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<210> 133

<211> 1373

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (403)

<223> n equals a,t,g, or c

<400> 133

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ggtcggttga gtcacttccg cgtcaccagc tcctgtgcct gccagtcggt gcccctcccg 120
ctccagccat gctctccgcc ctgcccggc ctgccagcgc tgctctccgc cgcagettca 180

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gcacctcggc ccagaacaat gctaaagtag ctgtgctagg ggccctctgga ggcatcgggc 240
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tcgcgcacac acccgagtg gccgcagatc tgagccacat cgagaccaa ggcgctgtga 360
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ttccggctgg agtccccaga aagccaggca tgacccgga cgacctgttc aacaccaatg 480
ccacgattgt ggccaccctg accgctgcct gtgcccagca ctgcccggaa gccatgatct 540
gcgtcattgc caatccgggt aattccacca tccccatcac agcagaagtt ttcaagaagc 600
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acacctttgt tgcagagctg aagggttttg atccagctcg agtcaacgtc cctgtcattg 720
gtggccatgc tgggaagacc atcatcccc tgatctctca gtgcaccccc aagggtgact 780
ttccccagga ccagctgaca gcactcactg ggcgatcca ggaggccggc acggaggtg 840
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aagccgttgc agataaaactt tgtattttaa tttgctttgg tgatgattac tgtattgaca 1260
tcatcatgcc ttccaaattg tgggtggctc tgtgggcgca tcaataaaaag ccgtccttga 1320
ttttattttt caaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 1373

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<210> 134

<211> 1657

<212> DNA

<213> Homo sapiens

<400> 134

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ggaacaagt cctgtagtgt gtttggatct gtaccctacg actgattata cgggtgaatgt 60
gaccctgctg agatctccta agcggcactc agtcaaataa caatagcaac tccccagca 120
gtaaaacaga ccatcagtaa catttcagga tttaatgaaa cctgcttgag atggagaagc 180
atcaagacag ctgatatgga ggagatgtat ttattccaca tttggggcca gagatggtat 240
cagaaggaat ttgccagga aatgaccttt aatatcagta gcagcagccg agatcccag 300
gtgtgcttgg acctacgtcc gggtaaccaac tacaatgtca gtctccgggc tctgtcttcg 360
gaacttcctg tggatcatctc cctgacaacc cagataacag agcctccctt cccggaagta 420
gaatttttta cgggtgcacag aggacctcta ccacgcctca gactgaggaa agccaaggag 480
aaaaatggac caatcagttc atatcaggtg ttagtgcttc ccctggccct ccaaagcaca 540
ttttcttgtg attctgaagg cgcttcctcc ttcttttagca acgcctctga tgcgtatgga 600
tacgtggctg cagaactact ggccaaagat gttccagatg atgccatgga gatacctata 660
ggagacaggc tgtactatgg ggaatattat aatgcaccct tgaaaagagg gactgattac 720
tgcattatat tacgaatcac aagtgaatgg aataaggtga gaagacactc ctgtgcagtt 780
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gacactgagt ggggaggatg cactgctgct gggcaggtgt tctggcagct tctcaggtgc 960
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gaatctctgc aacctcctat ataaaagcat ttctgttaat tcattcagaa tccattcttt 1320
acaatatgca gtgagatggg cttaagtttg ggctagagtt tgactttatg aaggaggtca 1380
ttgaaaaaga gaacagtgc gtaggcaaat gtttcaagca ctttagaaac agtacttttc 1440

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ctataattag ttgatatact aatgagaaaa tatactagcc tgccatgccataaagtgttcc 1500
tgctgtgtct gttaggcagc attgctttga tgcaatttct attgtcctat atattcaaaa 1560
gtaatgtcta cattccagta aaaatatccc gtaattaaaa aaaaaaaaaa aaaaaaaaaa 1620
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa ggcggcc 1657

<210> 135

<211> 2360

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1517)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2330)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2353)

<223> n equals a,t,g, or c

<400> 135

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ttcctctcca gctcagccgc gtaggtttgg acatatttga ctcttttccc cccaggttga 120
attgaccaa gcaatggtga tggagaagcc tagtcccctg ctggtcgggc gggaatttgt 180
gagacagtat tacacactgc tgaaccagcc cccagacatg ctgcatagat tttatggaaa 240
gaactcttct tatgtccatg ggggattgga ttcaaattga aagccagcag atgcagtcta 300
cggacagaaa gaaatccaca ggaaagtgat gtcacaaaac ttcaccaact gccacaccaa 360
gattcgccat gttgatgctc atgccacgct aaatgatggt gtggtagtcc aggtgatggg 420
gcttctctct aacaacaacc aggtcttgag gagattcatg caaacgtttg tccttgctcc 480
tgaggggtct gttgcaaata aattctatgt tcacaatgat atcttcagat accaagatga 540
ggtctttggt gggtttgctc ctgagcctca ggaggagtct gaagaagaag tagaggaacc 600
tgaagaaaga cagcaaacac ctgaggtggt acctgatgat tctggaactt tctatgatca 660
ggcagttgtc agtaatgaca tggagaaca tttagaggag cctgttgctg aaccagagcc 720
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gccagtatta gaagaaactg cccctgagga tgctcagaag agttcttctc cagcacctgc 840
agacatagct cagacagtac aggaagactt gaggacattt tcttgggcat ctgtgaccag 900
taagaatctt ccacccagtg gagctgttcc agttactggg ataccacctc atgttggtta 960
agtaccagct tcacagcccc gtccagagtc taagcctgaa tctcagattc caccacaaag 1020
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cagaccaatc cgtgaggctg gtgagcaagg tgacattgaa ccccgaagaa tggtagagaca 1140
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tgggctgggt ggtggaatga gaggccctcc ccgtggaggc atggtgcaga aaccaggatt 1500

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tggagtggga arggggnttg cgccacggca gtgaatcttc atggatcttc atgcagccat 1560
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gtgtgtgctc cctctccctc tcttcccttt cctgaccttt agtctttcac ttccaatttt 1740
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gaattttttt ttgataaagg atcacaaaac aattctaaaa cctaactgtt tttaccattg 2160
aaatttaaat tgtgataata ggttttaaat gtctagaatg caactgatag gcttttcttg 2220
aactgttagt ttttttgaag tagttttttc cakgtttaat ttgtatttgg ttaaaaaaac 2280
maaaaggcca aaaattcccc aaaaccccg ttaaccacca grgscaaacn gttgtggcct 2340
tcccaattaa cntgggatt 2360

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<210> 136

<211> 1042

<212> DNA

<213> Homo sapiens

<400> 136

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cccgcggcg ctgctgagtt tcttcatcta caaccgcgc ttcgggccgc gcgaaggaca 180
ggaggaaaat aagattttat tttatcatcc aaatgaggta gaaaagaatg agaagattag 240
aaatgtcggg ttgtgtgaag ctattgtaca gtttacaagg acatttagcc catcaaaacc 300
tgcaaaatct ttacatacac agaagaacag acagttcttc aatgaaccag aagaaaattt 360
ctggatggtc atggttggtc ggartcctat aattgaaaaa cagagtaaag atggaaaacc 420
agttattgaa tatcaagagg aggagttggt ggacaagggt tatagctcgg tgctgcggca 480
gtgctacagc atgtacaagc tttttaatgg tacatttctg aaagccatgg aagacggagg 540
cgtcaagctt ctgaaagaaa gattagagaa attcttccat cggatatttg aaacgctaca 600
tttgacgtca tgtgacctac ttgacatttt tggtggaatc agcttcttcc cgttgataa 660
aatgacttat ttgaaaatcc agtcctttat taatagaatg gaggaaagcc tgaatatagt 720
caaatacact gcttttctct ataacgatca gctcatctgg agtgattag aacaagatga 780
catgagaatt ttatacaaat accttaccac ctccctttty ccaaggcaca tcgaacctga 840
gttagcagga agggattctc caataagagc agaaatgccg ggaaatcttc aacactatgg 900
aagatttctt accggaccct tgaacctcaa tgatccagat gcaaaatgca gattcccaaa 960
aatttttgta aatacagwtg acacttatga agagctccat ttaatcgktt ataaggycct 1020
agaagaacc ccagtttaag tt 1042

```

<210> 137

<211> 1037

<212> DNA

<213> Homo sapiens

<400> 137

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ggcaccggga gcggcggggt ggtctacgct gtgcgcggcg gacgtcggag gcagcgggga 60
gcggagcggg gccgcggggg cctctccagg gccgcagcg cagcagttgg gcccccgcc 120
ccggccggcg gaccgaagaa cgcaggaagg gggccggggg gacccgcccc cggccggccg 180
cagccatgaa ctccaacgtg gagaacctac cccgcacat catccgcctg gtgtacaagg 240

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aggtagacgac actgaccgca gacccacccg atggcatcaa ggtctttccc aacgaggagg 300
acctcaccga cctccagggtc accatcgagg gccctgaggg gaccccatat gctggagggtc 360
tggtccgcat gaaactcctg ctggggaagg acttccttgc ctccccaccc aagggctact 420
tcctgaccaa gatcttcac ccgaacgtgg gcgccaatgg cgagatctgc gtcaacgtgc 480
tcaagaggga ctggacggct gagctgggca tccgacacgt actgctgacc atcaagtgcc 540
tgctgatcca ccctaacccc gagtctgcac tcaacgagga ggcggggccgc ctgctcttgg 600
agaactacga ggagtatgcr gctcggggccc gtctgctcac agagatccac gggggcgccg 660
gcggggcccag cggcagggcc gaagccggtc gggccctggc cagtggcact gaagcttcct 720
ccaccgaccc tggggcccca gggggcccgg gaggggctga ggggtccatg gccaagaagc 780
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aaaaaaaaa aaaaaaa 1037

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<210> 138

<211> 1490

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1225)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1239)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1348)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1452)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1487)

<223> n equals a,t,g, or c

<400> 138

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cggcacgagg tggattcttg tccatagtgc atctgcttta agaattaacg aaagcagtgt 60
caagacagta aggattcaaa ccatttgcca aaaatgagtc taagtgcatt tactctcttc 120
ctggcattga ttggtggtac cagtggccag tactatgatt atgattttcc cctatcaatt 180
tatgggcaat catcaccaaa ctgtgcacca gaatgtaact gccctgaaag ctacccaagt 240
gccatgtact gtgatgagct gaaattgaaa agtgtagcaa tggtagcctcc tggaatcaag 300

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tatctttacc ttaggaataa ccagattgac catattgatg aaaaggcctt tgagaatgta 360
actgatctgc agtggctcat tctagatcac aaccttctag aaaactccaa gataaaaggg 420
agagttttct cttaaattgaa acaactgaag aagctgcata taaaccacaa caacctgaca 480
gagtcgtgg gcccaacttcc caaatctctg gaggatctgc agcttactca taacaagatc 540
acaaagctgg gctcttttga aggattggta aacctgacct tcatccatct ccagcacaat 600
cggctgaaaag aggatgctgt ttcagctgct tttaaaggtc ttaaactact cgaatacctt 660
gacttgagct tcaatcagat agccagactg ccttctggtc tccctgtctc tcttctaact 720
ctctacttag acaacaataa gatcagcaac atccctgatg agtatttcaa gcgttttaat 780
gcattgcagt atctgcgttt atctcacaac gaactggctg atagtggaat acctggaaat 840
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gacataaaga gcttctgcaa gatcctgggg ccattatcct actccaagat caagcatttg 1020
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cgtgktgcta acgaagtcac tcttaattaa tatctgtatc ctggaacaat attttatggk 1140
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atgaatttta aaatctgagg gaaangtttg taaacattna tttttttaa gaaaagagaa 1260
aggcaggcct attcatcaca agaacacaca catatwcacg aatagacatc aaactcatgc 1320
tttatttgta aatttagtgt ttttttantt ctacgtcaaa gatgtgcaaa accttttacg 1380
gttgaggaa acagccagtt ttaaaatcct taaacttaag ttcctcaagc tggataaaac 1440
ataggagtac cnetgcacaa tatctgaaca tcaatgtcgg taaaatnggg 1490

<210> 139

<211> 1684

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (93)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (201)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1657)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1659)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1682)

<223> n equals a,t,g, or c

<400> 139

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tcgacccacg cgtccggcgg gctgagccac agcaggggtcg ccgcgggggtc ccggggccgt 60
getcccctgc cctccggga gcgcgcgggg cgnggcgggg cggggcgggga ccaggcgggc 120
gagctggggc ctcgcccctc cctcgggcgg tcacctgggc acgggcgctg cagggtgctgg 180
ggcctcaacc ttgcggaacc nacagccatc gatcctcggg tggcctcgag gtgggtggcag 240
ggccgcccc tgcagtccgg agacgaacgc acggaccggg cctccggagc argttcgggt 300
ggaargaamc gctctcgstt cgtcctacac ttgcgcaaat gtctccgagc ttactcacat 360
agcatattgg tatatcaaaa tgaaatgcaa ggaaccaaaa ataacataat tgaaggcagt 420
aaaagtgaat ttaaatagga agatcatcag tcaaggaaga cccactggag aggacagaaa 480
atgaagcagt gttttatcat gtgtatttca gcaggctctt ttgaaattta actaaaaata 540
tgactgctct ctcttcagag aactgctctt ttcagtacca gttacgtcaa acaaaccagc 600
ccctagatgt taactatctg ctattcttga tcatacttg gaaaatatta ttaaataatcc 660
ttacactagg aatgagaaga aaaaacacct gtcaaaattt tatggaatat ttttgcattt 720
cactagcatt cgttgatctt ttacttttgg taaacatttc cattatattg tatttcaggg 780
attttgtact ttaagcatt aggttcacta aataccacat ctgcctattt actcaaat 840
tttcttttac ttatggcttt ttgcattatc cagttttcct gacagcttgt atagattatt 900
gcctgaattt ctctaaaaca accaagcttt catttaagt tcaaaaatta ttttatttct 960
ttacagtaat ttaatttgg atttcagtcc ttgcttatgt tttgggagac ccagccatct 1020
accaaagcct gaaggcacag aatgcttatt ctcgctactg tcctttctat gtcagcattc 1080
agagttactg gctgtcattt ttcatggtga tgattttatt tgtagctttc ataacctgtt 1140
gggaagaagt tactactttg gtacaggcta tcaggataac ttcctatatg aatgaaacta 1200
tcttatattt tcctttttca tcccactcca gttatactgt gagatctaaa aaaatattct 1260
tatccaagct cattgtctgt tttctcagta cctgggttacc atttgacta cttcaggtaa 1320
tcattgtttt acttaaagt cagattccag catatattga gatgaatatt ccctggttat 1380
actttgtcaa tagttttctc attgctacag tgtattgggt taattgtcac aagcttaatt 1440
taaaagacat tggattacct ttggatccat ttgtcaactg gaagtgtgc ttcattccac 1500
ttacaattcc taatcttgag caaattgaaa agcctatatc aataatgatt tgktaatatt 1560
attaattaaa agttacagct gtcataagat cataatttta tgaacagaaa gaactcagga 1620
catattaaaa aataaactgr actaaaacaa aaaaaancna aaaaaaaaaa aaaagggcgg 1680
cnac 1684
```

<210> 140

<211> 427

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (395)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (417)

<223> n equals a,t,g, or c

<400> 140

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ggacttcctc ccagcacatt cctgcactct gccgtgtcca cactgcccc cagacccagt 60
cctccaagcc tgcctgccag tccttgcaag cccctcaggt tgggccttgc cacgggtgcc 120
gcaggcagcc ctgggctggg ggtaggggac tccctacagg cacgcagccc tgagacctca 180
gagggccacc ccttgagggt ggccaggccc ccagtggcca acctgagtgc tgccctctgc 240
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```

accagccctg ctggccctg gttccgctgg cccccagat gcctggctga gacacgccat 300
ggcccttcag ctggccca ca cytyttccc gsccttgaa kttggcaytg cagcagacag 360
ytccytgggc accagrcagy taacaggaca cagcngccag cccaaacagc agcggggnatg 420
ggggcag                                     427

```

```

<210> 141
<211> 889
<212> DNA
<213> Homo sapiens

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<220>
<221> misc feature
<222> (60)
<223> n equals a,t,g, or c

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<220>
<221> misc feature
<222> (698)
<223> n equals a,t,g, or c

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```

<220>
<221> misc feature
<222> (889)
<223> n equals a,t,g, or c

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```

<400> 141
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agatgggagg atctagaagg aggctgtctc ctgtgtagtg tataatttatc tgtaagttag 120
ccgttgggga aggattgaat acagagacgc tgtctgcttg ctgccttaag acagctagct 180
gaattgctga ttaactttta aaatacccag cttgggtttat ttttcttaga atctgttget 240
aagactgggg acgctgtttt cttttacaaa gggaaatcta agttaatttc aaggcattcg 300
aaatggggaa agactattat tgcatttttg gaattgagaa aggagcttca gatgaagata 360
ttaaaaaggc ttaccgaaaa caagccctca aatttcattc ggacaagaac aaatctcctc 420
aggcagagga aaaattttaa gaggtcgcag aagcttatga agtattgagt gatcctaaaa 480
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atggacaagg aggtaccttc cgggtacacct ttcattggcg tcctcatgct acatttgctg 600
catttttcgg aggggtccaa ccctttgaaa ttttcttttg aagacgaatg ggtgggtggt 660
gagattctga agaaatggaa atagrtggtg atccttttag tgcctttggt ttcagcatga 720
atggatatcc aagagacagg aattctgttg ggccatccc cctcaaacia gatcctccag 780
ttattcatga acttagagta tcacttgaag agatatatag tggttgtacc aaacgggatg 840
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```

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<210> 142
<211> 1505
<212> DNA
<213> Homo sapiens

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<220>
<221> misc feature
<222> (1493)
<223> n equals a,t,g, or c

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<220>
<221> misc feature
<222> (1499)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1500)
<223> n equals a,t,g, or c

<400> 142
agtgagggaa gcgatgggcg cgggaatggc cggcccacgg gtcgcaggag acgggacgcc 60
agcttttggc tccgttccgc tggctccttc gtcagtactg acacctcggg cttgtagagc 120
acttcacgca gcaaaagcgc cccccgtcta tatcatatcg cctctcggtc ctcctaaaag 180
tcgtatgaga tggagctgga ggaggggaag gcaggcagcg gactccgcca atattatctg 240
tccaagattg aagaactcca gctgattgtg aatgataaga gccaaaacct ccggaggctg 300
caggcacaga ggaacgaact aaatgctaaa gttcgccctat tgcgggagga gctacagctg 360
ctgcaggagc agggctccta tgtgggggaa gtagtccggg ccatggataa gaagaaagtg 420
ttggtcaagg tacatcctga aggtaaatth gttgtagacg tggacaaaaa cattgacatc 480
aatgatgtga caccgaattg ccgggtggct ctaaggaatg acagctacac tctgcacaag 540
atcctgcccc acaaggtaga cccttagtg tcatgatga tggaggagaa agtaccagat 600
tcaacttatg agatgattgg tggactggac aaacagatca aggagatcaa agaagtgatc 660
gagctgcctg ttaagcatcc tgagctcttc gaagcactgg gcattgctca gcccgaaggga 720
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catacggact gtacctttat tcgtgtctct ggctctgaat tggtagagaa attcataggg 840
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aaaattgctg agctcatgcc aggagcatca ggggctgaag tgaaggcggt gtgcacagaa 1260
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gcagtagcca aggtcatgca gaaggacagt gagaaaaaca tgtccatcaa gaaattatgg 1380
aagtgagtgg acagcctttg tgtgtatctc tccaataaag ctctgtgggc caagtcaaaa 1440
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aanggggggnn 1500
cccccc 1505

<210> 143
<211> 1235
<212> DNA
<213> Homo sapiens

<400> 143
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cgggcaaaag tcccaggaag gtggcgtcag catctgcagc cgcgtcgacg ttgtcggagc 120
ctccgcggag gaccacaggag agccggacta ggaccagggc cctgggcctc cccacactcc 180
ccatggagaa gctggcggcc tctacagagc cccaagggcc tcggccggtc ctggccgtg 240
agagtgtcca ggtgcccgat gaccaagact ttcgcagctt ccggtcagag tgtgaggctg 300
agggtgggctg gaacctgacc tatagcaggg ctgggggtgtc tgtctgggtg caggctgtgg 360

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agatggatcg gacgctgcac aagatcaagt gccggatgga gtgctgtgat gtgccagccg 420
agacactcta cgacgtccta cacgacattg agtaccgcaa gaaatgggac agcaacgtca 480
ttgagacttt tgacatcgcc cgcttgacag tcaacgctga cgtgggctat tactcctgga 540
ggtgtcccaa gccctgaag aaccgtgatg tcatcaccct ccgctcctgg ctccccatgg 600
gcgctgatta catcattatg aactactcag tcaaacatcc caaataccca cctcgaaag 660
acttgggtccg agctgtgtcc atccagacgg gctacctcat ccagagcaca gggcccaaga 720
gctgcgtcat cacctacctg gccaggtgg accccaaagg ctccttacc aagtgggtgg 780
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agcagagccc gttgccgagc ctggcgctgt cggagctgtc ggtgcagcat gcggactcac 960
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gagacaggac cgggcgagcc ctggggcggc ggccgctcct gcactttctc ccctcccca 1140
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<210> 144

<211> 1420

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1385)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1396)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1400)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1410)

<223> n equals a,t,g, or c

<400> 144

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actcacagcc catctgatct gttcaaagct gtcttttcca cctgctgaaa ttcattaaat 180
cactggaggc atgcataatg aatggagaat gagtgaactt ccaatgcaac ttggattcac 240
aaaccatta tcatagccaa tatgcagatt ttaaacagca ttccacattt catttgacca 300
tgtcttcttt ttgcacgcgc ctgctgcaga attccctact agaattgtgaa acaacgaaca 360
aaccacagaa cttagagtgt gctggttagt cacataactt agtagcagga ttgtgtatcc 420
aggcacaaag gtgtctttgc taatgttctc ttgtacctg ccctgcttca aacgctaaat 480
ggtatgggtc tttctttgtt gccagccata ttctacaaat aagacttttc aatatagtta 540

```

```
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gttactgtcc ttaattttcc atagtttggt ttcttaattg tgctcactaa gcatcgatct 720
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gctatctccc tgtgtactgt ttctcttaaa tggagcagat agaaatctgc agtgttggtca 1260
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<210> 145

<211> 1919

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1882)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1898)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1919)

<223> n equals a,t,g, or c

<400> 145

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cgtcggcccc cgggggggcg gcctcccggc atcttcgcgg cgaccaagga ctaccaggaa 120
ggggagcggc tgggatggcg cgtccggggc ccgskagtac aaagcgggag acctggtctt 180
cgccaagatg aagggtacc cgcactggcc ggcccgatt gatgaactcc cagagggcgt 240
gtgaagcctt cagcaaaca gtatcctatc ttctttttg gcacccatga aactgcattt 300
ctaggtccca aagacctttt tccatataag gagtacaaag acaagtttg aaagtcaaac 360
aaacggaaaag gatttaacga aggattgtgg gaaatagaaa ataaccag agtaaagttt 420
actggctacc aggaattca gcaacagagc tcttcagaaa ctgagggaga aggtggaaat 480
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agaaagaatg aaaaagcagg ctcaaaacgg aaaaagtc atacttcaaa gaaatcctct 600
aaacagtccc ggaaatctcc aggagatgaa gatgacaaag actgcaaaga agaggaaaac 660
aaaagcagct ctgaggggtg agatgcgggc aacgacacaa gaaacacaac ttcagacttg 720
cagaaaacca gtgaaggag ctaactacca taatgaatgc tgcatattaa gagaaaccac 780
aagaagggtta tatgtttggt tgtctaatat tcttgattt gatatgaacc aacacatagt 840
```

```

ccttggtgtc attgacagaa cccagtttg tatgtacatt attcatattc ctctctggtg 900
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tctttttgtg ttactccaaa ataaaggcaa tgatttattt ttttcccagt gccaatataa 1440
ttttgagcta agcactcaag gtggatactt tacattttta agctggaatc agcaacagcc 1500
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```

<210> 146

<211> 1379

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (925)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1371)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1377)

<223> n equals a,t,g, or c

<400> 146

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gccacgcgt ccgccacgc gtccgccac gcgtccgcc acgcgtccgg taagtttaga 60
tgactggtca atatctaaa aatgtatatt agtaagaagt tcttcctgga atttttctt 120
cgattctggc agaataaaca ggtgttttta gttttccac tgtctgagcc aagcaggacc 180
ctgtcccaga gcaagagatg tcccctcca tctctgacct ttgcctggga caagcttga 240
tgggggggcc cagcttcaag gctgtggtgg gaacagcacc cccaaatgcc agcctctcct 300
ttcttccat ccaccagtat actgcggggc catttctggt ctttgtccaa caggaaaccc 360
atctctggtg ggatagtcc tccagtggca cagggccact caccatgc atctctgtcc 420
tgcccgtcag tgctgggacg gacagcaagg gcaagccag tgtctggcrg atagggtggg 480
gggaacagag aggggagaat gccgtcctaa gcttctgctt ggggatcccc cacacgacct 540
gggtactgcc tgggaaacct gtcctaagta aaactatgga cctcgccctg cccaccggcc 600
tgcaagcca gcattctcgt gaaggtggat ggaagcgct ttgtcctcay tttgagctgc 660

```



```

aagctgggtc agcgggtctg aagccctcga gtgactttct aacccaagac ccagcccctg 720
gcaggaggag ggtgggtgca gggctggtg gacaaaaaga ggcctcagca ggcctggaag 780
acccttccag tacatccac agcgtgtcga gcagctggga gaacctgtgt caagctcgag 840
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```

<210> 147

<211> 514

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (3)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (406)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (412)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (418)

<223> n equals a,t,g, or c

<400> 147

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ttnggaaact gatcacttat caaggcttta tatattcttt acggatttag acatcaccat 60
accaagaagc ttactccatc tattccggtc tttgtaggac aggttcatt tttcagccca 120
tgttctgtaa gccacacagt atgcctgcag aagctgctta tcggagccaa atataattgt 180
cagtacaatt taaagaccac tatgtgtccc cggagaccaa cctgtttatt tccctgaaag 240
accgcaacac cccacacaac atgtttcaga catttggacc ttgtagata agacacttgt 300
aggagaaaga gatttcttaa attaagtagc ttatataccc ctagagaagg ccatacaaat 360
ctgcggacgc gtgggcggac gcgtgggggg accgtgggtc gaacgnaccc ancgtccncg 420
gacgcgtggg cggacgcgtg ggcggacgcg tgggcggacg cgtgggcgga cgcgtgggcg 480
gacgcgtggg cggacgcgtg ggcggacgcg tggg                    514

```

<210> 148

<211> 2058

<212> DNA

<213> Homo sapiens

<400> 148

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tctgcgttca gggacctcgt cctttgctgg ctgtggagcg gactgggcag cggccccctgt 180
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cagaggagga tctgctgtgc atagccaaga ctttctccta ctttcgggaa tctggctggg 360
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ccctgcctat gcctaaggag gatgcgccta gtgaccagc actgcctgct cctccaccag 720
ccactgctgt acacctaaaa ctggtgcagc ctttgtacg cagaagcagt gccgcagcc 780
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tgaccacccc gtctgtgaat gtgtccactc tcttctgccc ccagccatat ttggggagga 1620
tggaacaacta caataggtaa gaaaatgcag ccggagcctc agtccccagc agagcctgtg 1680
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ctcttccact gatttttctg taatgacatt atacctttat tacctcttta ttttattacc 1980
tctataataa aatgatacct ttcattgtaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2040
aaaaaaaaaa aaaaaaag                                     2058
```

<210> 149

<211> 1781

<212> DNA

<213> Homo sapiens

<400> 149

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taactcccag ggggttgact ggtggggtaa ctgagcctgc tttgcagtag gtcaccctgc 180
caaacaagct aatatggaaa ccacatgtaa cttagccaga ctataccttg ttagcttca 240
agaactcgca gtacattacc agctgtgatt ctccactgaa attttttttt taaggagct 300
```

```

caaggtcaca agaagaaatg aaaggaacaa tcagcagccc tgttcagaag gtggtttgaa 360
gacttcattg ctgtagtttg gattaactcc cctcccgcct acccccatcc caaactgcat 420
ttataatfff gtgactgagg atcatttggt tgtaaatgta ctgtgccttt aacttttagac 480
aactttttat tttgatgtcc tgttggctca gtaatgctca agatatcaat tgttttgaca 540
aaataaattt actgaacttg ggctaaaatc aaaccttggc acacaggtgt gatacaactt 600
aacaggaatc atcgattcat ccataaataa tataaggaaa aacttatgcg gtagcctgca 660
ttagggcttt ttgatacttg cagattgggg gaaaacaaca aatgtcttga agcatattaa 720
tggaattagt ttctaattgt gcaaaactgta ttaagttaa gttctgattt gctcactcta 780
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<210> 150

<211> 1709

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1612)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1660)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1678)

<223> n equals a,t,g, or c

<400> 150

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gttggagggc tgagttttga caccaatgag cagtcgctgg agcaggtcct ctcaaagtac 180
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tcccgtgggt accgtgggtg ctctgccggg ggccggggct tcttccgtgg gggccgagga 420
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caggggactt cagaaggcaa cggttacta 1709
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<210> 151

<211> 922

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (906)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (915)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (922)

<223> n equals a,t,g, or c

<400> 151

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cacctcgggg acattattgc gcgtggaacg gctgcttttg gaagactatt gcccagaaga 180
aaagatgttt ggttttcaca agccaaagat gtaccgaagt atagagggct gctgtatttg 240
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```
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gagctgtttt ggattgcatg agactcgttc aggagacatc tgcaatgcct gtgtcctgct 360
tgtgaaaaga tggaagaagt tgccagcagg atcaaaaaaa aactggaatc atgtggtaga 420
tgcaagggct ggacccagtc taaagactac attgaaacca aagaaagtga aaactctatc 480
tggaacagc ataaaaagca accagatcag taaactgcag aaggaattta aacgtcataa 540
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gaaagcagct gctgagaagc cagaggagca gggccagagc ctctgcccac ctccactcag 840
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<210> 152

<211> 635

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (13)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (594)

<223> n equals a,t,g, or c

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<221> misc feature

<222> (614)

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<220>

<221> misc feature

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<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (628)

<223> n equals a,t,g, or c

<400> 152

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ttscctata gggngncgtt taaattcntt ggcgg 635

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<210> 153

<211> 2328

<212> DNA

<213> Homo sapiens

<400> 153

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<210> 154
<211> 1268
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (80)
<223> n equals a,t,g, or c

<400> 154
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<211> 4299
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (2813)
<223> n equals a,t,g, or c

<400> 155
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<210> 156

<211> 1006

<212> DNA

<213> Homo sapiens

<400> 156

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<210> 157

<211> 1686

<212> DNA

<213> Homo sapiens

<400> 157

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aaaaaa
1686

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<210> 158

<211> 4147

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (13)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (292)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (4145)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (4146)

<223> n equals a,t,g, or c

<400> 158

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<210> 159

<211> 1242

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1235)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1236)

<223> n equals a,t,g, or c

<400> 159

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<210> 160

<211> 2229

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (29)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (43)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (55)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (59)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (128)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (301)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2226)

<223> n equals a,t,g, or c

<400> 160

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gttgctnag gctggtttcg gattcctggg ctcaagtgat cttccacct aggtttccca 180

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ncaatattat taaaatactc atttggaata gaattccata tgggttaacc agagtactgt 360
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<210> 161

<211> 1920

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (43)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (119)

<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1755)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1766)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1832)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1841)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1915)
<223> n equals a,t,g, or c

<400> 161
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<210> 162

<211> 2619

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (2546)

<223> n equals a,t,g, or c

<400> 162

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<210> 163

<211> 1419

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (230)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (624)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (697)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1187)

<223> n equals a,t,g, or c

<400> 163

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<210> 164

<211> 3810

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (189)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2523)

<223> n equals a,t,g, or c

<400> 164

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<210> 165

<211> 817

<212> DNA

<213> Homo sapiens

<400> 165

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ccactggaga gaacaggctg gcctctgcac tctggattgg tgacaggagt tatccaggcc 120

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tgtctgaagg caatagcagg cctcccatcc ctggaccgcc ttatgtggcc tcccctgacc 180
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cctgggaggg ctcctcagag gcaggcctgg actgggctgg ggccagcttc tcccagggga 300
ctccratgtg ggcggccttg gatgagcaga tgctgcagga gggcatccag gcmtcgcttc 360
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<210> 166

<211> 1578

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (16)

<223> n equals a,t,g,.or c

<220>

<221> misc feature

<222> (38)

<223> n equals a,t,g, or c

<400> 166

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tgggagggaa accatgtctt gctaaacctg tttctggtgc ctcccatccc cagaccacc 180
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ttcagcccat caaccagcat tgggtccata gggaagcaca ggggactcac cctctttcat 480
atcccttgcc ctgcccgtga atggacaatc actttttggg ataggttgaa atttttaaag 540
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cataccagat aatagctgca ttactgccaa ctgaccttat aaccctctgc accttcaaaa 1500
agattcatgg tttttaattg ctgcttttaa taacatttgt taaagttaaa aaaaaaaaaa 1560
aaatcttcgg gggggggg

```

<210> 167

<211> 1694

<212> DNA

<213> Homo sapiens

<400> 167

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tcgcaccggc ttccgggtga ctgcttccta ctgctcgtgc tgctgctcta cgcgccagtc 180
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aaaaaaaaact cgag

```

<210> 168

<211> 1636

<212> DNA

<213> Homo sapiens

<400> 168

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gtggaggaga tcagtctgct gcagccgag gtggaggagt ccgtgctcaa cctgggcaaa 180

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acccacctgc cgtccaaaaa gaagaaagta ctcttggggag ttggggatcc caagattggt 360
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ttgaagagac cgctgg 1636

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<210> 169

<211> 667

<212> DNA

<213> Homo sapiens

<400> 169

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gcgaagagcc acatccaggc ctgagggcgg caccacagcc ctgcccttgc ttccttcaat 600
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<210> 170

<211> 3598

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature
<222> (1)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (16)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (22)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (964)
<223> n equals a,t,g, or c

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<210> 171

<211> 940

<212> DNA

<213> Homo sapiens

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<223> n equals a,t,g, or c

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<222> (12)

<223> n equals a,t,g, or c

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<221> misc feature

<222> (919)

<223> n equals a,t,g, or c

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<223> n equals a,t,g, or c

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<211> 1458
<212> DNA
<213> Homo sapiens

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gcagctttgc agcagcaatt agagaacatt catcttagac aagacaaagc tgaagcattt 360
gtcaatackt ggtcttctat gggcaagaa acagttgaaa agttccggca gagaattctg 420
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<210> 173

<211> 2709

<212> DNA

<213> Homo sapiens

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<221> misc feature

<222> (2595)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2622)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2659)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2670)

<223> n equals a,t,g, or c

<400> 173

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<210> 174

<211> 1013

<212> DNA

<213> Homo sapiens

<400> 174

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<210> 175

<211> 1697

<212> DNA

<213> Homo sapiens

<400> 175

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<210> 176

<211> 1409

<212> DNA

<213> Homo sapiens

<400> 176

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<210> 177

<211> 1503

<212> DNA

<213> Homo sapiens

<400> 177

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<210> 178
<211> 1378
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (3)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (82)
<223> n equals a,t,g, or c

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gcacatactc aataaataaa tgactgcatt gttgtaaaaa aaaaaaaaaa aaaaaaaaaa 1378

<210> 179
<211> 2251
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (2020)
<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2050)

<223> n equals a,t,g, or c

<400> 179

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ctccccgcgc cccttcaccc cgacctggcc gcggagccgc gagcgtgaag ccgccgcctt 180
ccgggaaagt cttaatagac atcgatactt gaattcttta tttcccagtg aaaactccac 240
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caatgtgtct ttgccgttaa gatttgactg gagggacaag caggttgtga cacaagtga 420
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gatgcaagta aaactggtga aagattcaga atatcctttt aaagcacaaa atggtctgtg 660
ccattacttt tctggttcac attctggatt ttcaatcaaa ggttattctg catatgactt 720
cagtgaccaa gaagatgaaa tggcaaaagc acttcttacc tttggccctt tggtagtcat 780
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```

<210> 180

<211> 1000

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (20)

<223> n equals a,t,g, or c

<400> 180

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gtccggggaa ggcgggagac agcgcagttt gaatcgcggg gcgacgaagg agtaggtggg 120
gggatctcac cgtgggtccg attagccttt tctctgcctt gcttgcttga gcttcagcgg 180
aattcgaaat ggctggcggg aaggctggaa aggactccgg aaaggccaag acaaaggcgg 240
tttcccgctc gcagagagcc ggcttgcagt tcccagtggt ccgtattcat cgacacctaa 300
aatctaggac gaccagtcac ggacgtgtgg gcgcgactgc cgctgtgtac agcgcagcca 360
tcctggagta cctcaccgca gaggtacttg aactggcagg aaatgcatca aaagacttaa 420
aggtaaacgc tattaccctt cgtcacttgc aacttgctat tcgtggagat gaagaattgg 480
attctctcat caaggctaca attgctgggt gtggtgtcat tccacacatc cacaaatctc 540
tgattgggaa gaaaggacaa cagaagactg tctaaaggat gcctggattc cttgttatct 600
caggactcta aatactctaa cagctgtcca gtgttggtga ttccagtggg ctgtatctct 660
gtgaaaaaca caattttgcc tttttgtaat tctatttgag caagttggaa gtttaattag 720
ctttccaacc aaccaaattt ctgcattcga gtcttaacca tatttaagtg ttactgtggc 780
ttcaaagaag ctattgattc tgaagtagtg ggttttgatt gagttgactg tttttaaaaa 840
actgtttgga ttttaattgt gatgcagaag ttatagtaac aaacatttgg ttttgtacag 900
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aaaaaaaaaa aaaaaaaaaa maaaaaaggg gggggccccc 1000
```

<210> 181

<211> 1429

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (761)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1407)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1420)

<223> n equals a,t,g, or c

<400> 181

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actgggactc ccagcagagc ccaccagcca gccctggccc accccccagc ctccagagaa 60
gccccgcacg ggctgtctgg gtgtccgcca tccagggtct ggcagagcct ctgagatgat 120
gcatgatgcc ctcccctcag cgcaggctgc agagcccggc cccacctccc tgcgcccttg 180
aggggccccca gcgtctgcag ggtgacgcct garacagcac cactgctgag gagtgaggac 240
tgtcctccca cagacctgca gtgagggggc ctccatgcgc agatgagggg ccactgaccc 300
acctgcgctt ctgctggagg aggggaagct gggcccaaag gccmgsgrag gcagcgtggg 360
ctctgccaat gtgggctgcc cctcgcacac agggctcaca gggcaggcct tgctgggggtc 420
```



```

cagggctgtt ggaggacccc gagggctgag gagcagcagg acccgccctgc tcccatcctc 480
accagatca ggaaccaggg cctccctgtt cacggtgaca caggtcaggg ctacagagtga 540
ccctcrgctg tcacctgctc acagggatgc tgggtggctgg tgagaccccg cactgcasac 600
gggaatgcct aggtcccttc ccgacccagc cagctgcagg gcacggggac ctggatagtt 660
aagggctttt ccaaaccatgc atccatttac tgacacttcc tgtccttgtt catggagagc 720
tgttcgctcc tcccagatgg ctteggaggg ccgcaggsga nccttgacc ctggtgacct 780
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caccgctcag tgtcagcggg tgacgtgtgt tcttttgagt ccttgatga ataaaaggct 1380
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```

<210> 182

<211> 2725

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (2713)

<223> n equals a,t,g, or c

<400> 182

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aggaagacac tcccaattct gtttgggagc ctgcgaagggt gcttgtgttt gtcagacaaa 120
tacagccagg cctgccaccc cttaggctcc aaagtccgga ggtgcagaaa gccaggacca 180
agagacaggc agctcaccag ggtggacaaa tcgccagaga tgtggtgcat tgcctgttt 240
tcacttttgg catgggttta tgctgagcct accatgtatg gggagatcct gtcccctaac 300
tatectcagg catatccag tgaggtagag aaatcttggg acatagaagt tcctgaaggg 360
tatgggattc acctctactt caccatctg gacattgagc tgtcagagaa ctgtgcgtat 420
gactcagtgc agataatctc aggagacact gaagaaggga ggctctgtgg acagaggagc 480
agtaacaatc cccactctcc aattgtggaa gaggttccaag tcccatacaa caaactccag 540
gtgatcttta agtcagactt ttccaatgaa gacggttta cgggggttgc tgcatactat 600
gttgccacag acataaatga atgcacagat tttgtagatg tccctttagt ccacttctgc 660
aacaatttca ttggtggtta ctctgctcc tgcccccg aatatttctt ccatgatgac 720
atgaagaatt gcggagttaa ttgcagtggt gatgtattca ctgcactgat tggggagatt 780
gcaagtccca attatcccaa accatatcca gagaactcaa ggtgtgaata ccagatcccg 840
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agtaattcca aactgaaatg tcaacctgtg gactgtggca ttctgaatc cattgagaat 1320

```

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ggtaaagttg aagaccaga gagcactttg tttgggttctg tcatccgcta cacttgtag 1380
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<210> 183

<211> 1751

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (344)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (416)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1617)

<223> n equals a,t,g, or c

<400> 183

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gtggtctgtg ggttctcaga gcagaccacc tgccaggaag tggatcatcg actagcccaa 180
gcaataggcc agactggccg ctttgtgctt gtgcagcgcc ttccgggagaa ggagcggcag 240
ttgtgccac aagagtgtcc agtgggcgcc caggccacct gcggacagtt tgccagcgat 300

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```
gtccagtttg tcctgagggc cacagggccc agcctagctg ggangccctc ctcagacagc 360
tgtccacccc cggaacgctg cctaattcgt gccagcctcc ctgtaaagcc acgggntgcg 420
ctgggctgtg agccccgcaa aacactgacc cccgagccag cccccagcct ctcacgccct 480
gggcctgcgg cctgtgaaca cccacaccag gctgctgcac agacctgcgg ggcctggagc 540
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aaaaaaaaaa a 1751
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<210> 184

<211> 2200

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (2096)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2140)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2157)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2181)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2184)

<223> n equals a,t,g, or c

<400> 184

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ggcagcagca ggcacatact gaagggcaac ttctcaatcc gtacagccaa gatgcagcag 60
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ccactactgc ttccccgaaa cagacaaata tatgagcaca acgaagctgc cctattcatg 180
gaccacagcg ggatgctggt gatgcttcct tttgacctgc ggatcccttt tgcaagatat 240
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cgcaagttag atcgatttca tcccaaagaa cttctggagt gtgcatttga tattgtcact 360
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caagagtttc cagcacttca ggaaagaaat tacagtatct atttgaacca taccatgtta 480
ttgaaagcaa tactcttaca ctgtgggac ccagaagata aactcagtca agtctacatt 540
attctgtatg atgctgtgac agagaagctg acgaggagag aagtggaaagc taaattttgt 600
aatctgtctt tgtcttctaa tagtctgtgt cgactctaca agtttattga acagaaggga 660
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gtactgcaga aactgaggac taaagtcact gatgaaagga atggcagaga agcttccgat 1380
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cagtttttat cattagagtg ggatgctgat gaacaggcat ttaacacaac tgtgaagcag 1680
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tactggaata atggaatggt gtacattcat cataatttaa aattaaattc taagaagagg 1920
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gcttgaaacc aggagtttga gaccagcctg agcaacaaag caagacccca tctctataaa 2040
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tgagatggat catctgagcc tcaggaggtt gacgctgcan tgactgtgac tgcgccnctg 2160
actccatctg gggcaacaga ncangaccct gcttaaatac 2200
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<210> 185

<211> 1987

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (523)

<223> n equals a,t,g, or c

<400> 185

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gggccaaatt cgacacgaga cgcttctcgg cagacgcagc tcgattccag ataggaaaaa 120
ggaaatatga ctttgattct tcggaggtgc ttcagggact ggactttttt ggaaacaaga 180
agtctgtccc aggtgtgtgt ggagcatcac aaacacatca gaagcccaa aatggagaga 240
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tgacttcaga aattgcttcc caagaagaag gtgctactat acagtggatg tcactctgtag 360
aagcaaagat tgaagacaaa aaagttcaga gagaaagtaa actaacttcc ggaaagttag 420
agaatctcag aaaagaaaag ataaacttct tgcggaataa acacaaaatt cactccaag 480
gaaccgatct tcctgaccca attgctacat ttcagcaact tgnaccagga atataaaatc 540
aattctcgac tacttcagaa cattctagat gcaggtttcc aaatgcctac gccaatccaa 600
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gagttaataa aaatttctga gggAACagga ttcagaatac acatgatcca caaagcagca 840
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<210> 186

<211> 1737

<212> DNA

<213> Homo sapiens

<400> 186

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ggatgatatg tgggcaaaat cacttatgaa agtagaagca agaatacgtt gggttgctac 180
cacataaagc catgctgttt ttggtcaaac tgtgtaaact ggaaaaattc acatcatttc 240
tgagtttaat cacttttaga tatattcaca ttgttttggt gaatttgctg aattgaattg 300
ttttcttttc tcaaatctgt gatctctttt ctttatcctg tttctttgtt cctttcggtt 360

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<210> 187

<211> 1132

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1131)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1132)

<223> n equals a,t,g, or c

<400> 187

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gaggctccag gcctgaggac caagggatgg cccgactcgg cggtttgcgg aggatgcagg 240
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cagacgcggc gatggcatca cacagacggt gatgatgtca cacacagaca cagtgaacaac 660
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<210> 188

<211> 1267

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (12)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (25)

<223> n equals a,t,g, or c

<400> 188

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aaaaata 1267

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<210> 189

<211> 3787

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (22)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (155)

<223> n equals a,t,g, or c

<400> 189

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<210> 190

<211> 554

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (520)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (542)

<223> n equals a,t,g, or c

<400> 190

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aactgtaaca tctttaattm tttctgctaa tattttcagt ttgcagacat atgatttttg 480
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<210> 191

<211> 874

<212> DNA

<213> Homo sapiens

<400> 191

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gccgtgctgc atggcaccgt cctgcggcac gtggccaatc cccgcggcgc tgtcacgccg 180
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<210> 192

<211> 2103

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (140)

<223> n equals a,t,g, or c

<400> 192

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<210> 193

<211> 1317

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1314)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1315)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1316)

<223> n equals a,t,g, or c

<400> 193

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ccttctgaag ttggaatctg taatgattta aaacatgaga ctggtccagt gggcttggtg 120
ctccagacct catgccttct gggaccaga catctctgca atctcgggaa ctggaatata 180
ccacttcttg tcaaggtact agcaagttgc cgtggataca gaaatctctg caggcaagtt 240
gctccagagc atattgcagg acaagcctgt aacgaatagt taaattcacg gcactctgat 300
tcctaatacct tttccgaaat ggcaggtgtg agtgccctga taaaatattc tatgtttacc 360
ttcaacttct tgttctggct atgtggtatc ttgatcctag cattagcaat atgggtacga 420
gtaagcaatg actctcaagc aatttttggg tctgaagatg taggctctag ctccctacgtt 480
```

```

gctgtggaca tattgattgc ttaggtgcc atcatcatga ttctgggctt cctgggatgc 540
tgcggtgcta taaaagaaag tcgctgcatg cttctgttgt ttttcatagg cttgcttctg 600
atcctgctcc tgcaggtggc gacaggtatc ctaggagctg ttttcaaadc taagtctgat 660
cgcattgtga atgaaactct ctatgaaaac acaaagcttt tgagcgccac aggggaaagt 720
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atctctttca taaaagactt cttggcaaaa aatttgatta tagttattgg aatatcattt 960
ggactggcag ttattgagat actgggtttg gtgttttcta tggtcctgta ttgccagatc 1020
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gctttggctt tgtaaattta aatatgtaag tgctatataa gtcaggagca gctgtctttt 1140
taaaatgtct cggctagcta gaccacagat atcttctaga catattgaac acatttaaga 1200
tttgagggat ataagggaaa atgatatgaa tgtgtatttt tactcaaat aaaagtaact 1260
gtttacgttg aaaaaaaaaa aaaargkcgg ccgytytara gayccarctt actnnnc 1317

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<210> 194

<211> 1252

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1231)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1240)

<223> n equals a,t,g, or c

<400> 194

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gccacgmgc ggccgcgcgg aggaggccaa gatggcggca gctgcggctt cgcttcgcgg 60
ggtagtgttg ggccgcgcgg gcgcggggct cccggggcgc cgtgcccggg gtctgctgtg 120
cagcgcgcgg cccgggcagc tcccgcctacg gacacctcag gcagtggcct tgctgctcga 180
gtctggcctt tcccgcggcc ggaaagtgat gctgtcagcg ctgggcctgc tggcggcagg 240
gggtgcgggg ctggccgttg ctctgcattc ggctgtgagt gccagtgacc tggagctgca 300
ccccccagc tatccgtggt ctccaccgtg cctcctctct tccttgacc acaccagcat 360
ccggaggggt ttccaggat ataagcagg gtgcgcctcc tgccacagca tggacttcgt 420
ggcctaccgc cacctggttg gcgtgtgcta caggaggat gaagctaagg agctggctgc 480
ggaggtggag gttcaagacg gcccacatga agatggggag atgttcatgc ggccaggga 540
gctgttcgac tatttcccaa aaccataccc caacagttag gctgctcgag ctgccaacaa 600
cggagcattg cccctgacc tcagctacat cgtgcgagct aggcattggt gtgaggacta 660
cgtcttctcc ctgctcagcg gctactgcca gccaccacc ggggtgtcac tgcgggaagg 720
tctctacttc aaccctact ttctggcca ggccattgcc atggcccctc ccatctacac 780
agatgtctta gagtttgacg atggcaccac agctaccatg tcccagatag ccaaggatgt 840
gtgcaccttc ctgcgctggg catctgagcc agagcacgac catcgaaaac gcatggggct 900
caagatgttg atgatgatg ctctgctggt gccctggtc tacaccataa agcggcacaa 960
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ggcctcagct aagcctctct tcatctggaa gaagaggcaa gggggcaggga gaccaggctc 1140
tagctctggg ccctccttca gccccatca tgggaataaa ttaattttct caatgtaaaa 1200

```

aaaaaaaaa aaaactcggg gggggcccgg ncccaatttn cccttttggg gg 1252

<210> 195

<211> 1688

<212> DNA

<213> Homo sapiens

<400> 195

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ccccctgcgg gcgctcccat ggcacagttc gcgttcgaga gtgacctgca ctcgctgctt 120
cagctggatg caccatcccc caatgcaccc cctgcgcgct ggcagcaaaa gccaaaggaa 180
ccgcagcccg gccccctcac ccattgcggc cgccaaccga tcccacagcg ccggcaggac 240
tccggggccga actcctggca aatccagttc caaggttcag accactccta gcaaacctgg 300
cggtgaccgc tatatcccc atcgcagtg tgcacagatg gaggtggcca gcttcctcct 360
gagcaaggag aaccagcctg aaaacagcca gacgccacc aagaaggaa atcagaaagc 420
ctgggctttg aacctgaacg gttttgatgt agaggaagcc aagatccttc ggctcagtgg 480
aaaaccacaa aatgcgccag agggttayca gaacagactg aaagtactct acagccaaaa 540
ggccactcct ggctccagcc ggaagacctg ccgttacatt ccttccttgc cagaccgtat 600
cctggatgcg cctgaaatcc gaaatgacta ttacctgaac cttgtggatt ggagttcttg 660
gaatgtactg gccgtggcac tggacaacag tgtgtacctg tggagtgcaa gctctggtga 720
catcctgcag cttttgcaaa tggagcagcc tggggaatat atatcctctg tggcctggat 780
caaagagggc aactacttgg ctgtgggcac cagcagtgtc gaggtgcagc tatgggatgt 840
gcagcagcag aaacggcttc gaaatatgac cagtcactct gcccgagtgg gctccctaag 900
ctggaacagc tatatcctgt ccagtgggtc acgttcttgc cacatccacc accatgatgt 960
tcgggtagca gaacaccatg tggccacact gagtggccac agccaggaa tgtgtgggct 1020
gcgctgggcc ccagatggac gacatttggc cagtgggtgt aatgataact tggtaaatgt 1080
gtggcctagt gctcctggag aggggtggctg gggtcctctg cagacattca cccagcatca 1140
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gggcaccagt gatcgacaca ttcgcactct gaatgtgtgc tctggggcct gtctgagtgc 1260
cgtggatgcc cattcccagg tgtgtcccat cctctgggtc cccattaca aggagctcat 1320
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ccaaggcatc cgctgaagac caaccatca cctcagttgt tttttatatt tctaataaag 1620
tcatgtctcc ctcatgttt tttttttaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1680
aaaaaaaaa 1688

<210> 196

<211> 756

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (756)

<223> n equals a,t,g, or c

<400> 196

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aggtagaggc cagggcagcg cgtccgggag cggagtcgcg gcccgccgc gccatgcccg 120

```
acagctggga caaggatgtg taccctgagc ccccgcgccg cacgccggtg cagcccaatc 180
ccatcgtcta catgatgaaa gcgttcgacc tcatcgtgga ccgacccgtg accctcgtga 240
gagaatttat agagcggcag cacgcaaaga acaggtatta ctactaccac cggcagtacc 300
gccgcgtgcc agacatcact gagtgcgaagg aggaggacat catgtgcatg tatgaagccg 360
aaatgcagtg gaagagggac tacaaagtcg accaagaaat tatcaacatt atgcaggatc 420
ggctcaaagc ctgtcagcag aggggaaggac agaactacca gcagaactgt atcaaggaag 480
tgagcagatt caccacaggtg gccaaaggcct accaggaccg ctatcaggac ctggggggcct 540
acagttctgc caggaagtgc ctggccaaac agaggcagag gatgctgcaa gagagaaaag 600
ctgcaaaaaga ggccgcccgt gccacctcct gaggcagctg tgggtgcccc tgctgtgtgg 660
ctctgtatga ctgttgctga aatataaagc cctgcaacct gaaaaaaaaa aaaaaaaaaa 720
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaattn 756
```

<210> 197

<211> 1471

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (458)

<223> n equals a,t,g, or c

<400> 197

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ccaaagcgttc ctctgccgga catacaagag ttccccaact atgaggtgat tgatgagcag 120
acacccctgt actcagcaga tccaaacgcc atcgatacgg actattacco tggaggctac 180
gacatcgaaa gtgattttcc tccaccccca gaagacttcc ccgcagctga tgagctacca 240
ccgttaccgc ccgaattcag caatcagttt gaatccatcc accctcctag agacatgcct 300
gccgcgggta gcttggggttc ttcatcaaga aaccggcaga ggttcaactt gaatcagtat 360
ttgcccattt tttatccctt cgatatgtct gaacctcaaa caaaaggcac tgggtgagaat 420
agtacttgta gagaacccca tgccccttac ccgccagngt atcaaagaca cttcgaggcg 480
cccgtgtctg agagcatgcc catgtctgtg tacgcctcca ccgcctcctg ctctgacgtg 540
tcagcctgct gcgaagtgga gtccgaggtc atgatgagtg actatgagag cggggacgac 600
ggccacttcg aagaggtgac gatcccgcgc ctggattccc agcagcacac ggaagtctga 660
ctctcaactc ccccaaaagt gcctgacttt agtgaaccta gaggtgatgt gagtaatccg 720
cgctgttctt tgcagcagtg cttccaagct ttttttggcg agccgaatgg gcatggctgc 780
gctggatcct gcgcctctgg acgtgctagc catttccagt gtcccaacta ctgtcatcgt 840
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aaaataatca aacgaaaaat cagtcctgtg ttgtcagcat gattcatgta tttatataga 960
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ggtggtagtg ccattatcta gcaccctgat tttttttttt tactataacc agggtttcat 1140
tctgtctttt tccactgaag tgtgacattt tgttagtaca tttcagtgta gtcattcatt 1200
tctagctgta cataggatga aggagagatc agatacatga acatgtctta catgggttgc 1260
tgtatttaga attataaaca tttttcatta ttggaaagtg taacggggac cttctgcata 1320
cctgtttaga accaaaacca ccatgacaca gtttttatag tgtctgtata tttgtgatgc 1380
aatggctctg taaaggtttt taatgaaaac taccattagc cagtctttct tactgacaat 1440
aaattattaa taaaataaaa aaaaaaaaaa a 1471
```

<210> 198

<211> 692

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (43)

<223> n equals a,t,g, or c

<400> 198

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gtgaattggt aattcgacct cccctatagg gccgaatttg ggntaccggg cccccccctt 60
agtgcggcct gctcttgga gttcaggctc ggttgctctt tgggagccat ggagagtgac 120
ttttatctgc gttactacgt ggggcacaa ggaagttcg gccacgagtt cctggagttt 180
gagtttcgac cggacgggaa gttaagatat gccacaaca gcaattacaa gaatgatgtc 240
atgatcagaa aagaggctta tgtacataaa agcgtgatgg aggaactgaa gagaataatt 300
gacgacagtg aaattaccaa agaggatgat gcattgtggc ctccctcctga ccgagtgggc 360
cggcaggagc ttgaaatcgt cattggagat gaacacattt cttttacaac atcaaaaatt 420
ggttccctta ttgatgtcaa tcaatccaag gatccagaag gcttacgagt attttattat 480
cttggtccagg acctgaagtg tttggtcttc agtcttattg gattacactt caagattaaa 540
ccaatctaga ctgaatattg gtgtggacat ggggggtggg tgggagtaga aaattttgtg 600
tatatcaggg cagtattttt ttatgaacta taaatgattg tctttaataa atatgtgata 660
aaatccaatt tttattattt tataaagacc tg 692
```

<210> 199

<211> 1573

<212> DNA

<213> Homo sapiens

<400> 199

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ctcgtgccga attcggcacg agccggcgcc agctacgccg ctgccgctgt cactatggcc 60
cattacaaag ccgccgactc gaagcgtgag cagttccgga ggtacttgga gaagtcgggg 120
gtgctggaca cgctgaccaa ggtgttggtg gccttatatg aagaaccaga gaaacctaac 180
agtgttttgg atttttttaa gcatcactta ggagctgcta ctccagaaaa tccagaaata 240
gagctgcttc gcctagaact ggccgaaatg aaagagaagt atgaagctat tgtagaagaa 300
aataaaaaac tgaaagcaaa gcttgctcag tatgaaccac ctcaggagga gaagcgtgct 360
gaataggatt cttctcagtt tgaaagacaa tgaaaaatgg ttttgtatga cttgaatagt 420
ttgtatagta tataatcttt tctgaacaga tgctatagaa ctcttttaat atgtttaatt 480
cacctatcac actctgttaa aaacacatag aatcatcaat aaaaactcaa tataactttc 540
tttgggtctt aaagcaggag aatccaaagt aaatcctgaa caaaacctaa acacagccat 600
ctaactcatt accttaaaag acattctgkt tattagctctg attaggaatg atggcactgg 660
ttgtatttta gccaaagacag ttttagcatgg agctattcct tgggtgcagtt caggatatga 720
acacagggtac agtcattctt tgaaggtgac actgttctgt atattcccta taggcagctg 780
gagagatctg tgtgacacaa gatgcttttg tacgggttcc catgaatctt ctgctcttgt 840
ttgtgtgaca tggaacaaat aacttctttg ccaccacttt gccttagata actgtgtgtg 900
tgtgtgccag tttgaactct gacaccacat tttccttcta tgcaatcatg cctgtctgat 960
aatcttgcat tgctttcctc tgagctttag tgggtcctag ttgcacactg gcctttctgt 1020
gctgtttttc aatttgcccta ataatagcag ttaccctgat tgtaatttat gtaactttta 1080
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agccttgaat tcattttatc ttcattatcc ctgtgaagta ggtgggacaa gtataagggg 1320
aagagggggt ctgaattttt aggccaaaga ctgatattaa tacaatcac tcactaactg 1380
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tagagccttg ggcattatca gtgaactact ctgagattta ctgtcttcat ctgtttaatg 1440
agtagaatgt ccgtgatgcc tacctcacag gggtgtgtg aggggtcaaat gagaatgtat 1500
gtgaaagatt tgtaaatggg aaagcactat attcttggtta aaaaaaaaaa aaaaaaaaaa 1560
aaaaaaaaaa aaa 1573

<210> 200

<211> 2742

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (26)

<223> n equals a,t,g, or c

<400> 200

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tattcacaga tgccatcaag ctgaatcctc gcttgcccat tttgtatgcc aagagggcca 120
gtgtcttcgt caaattacag aagccaaatg ctgccatccg agactgtgac agagccattg 180
aaataaatcc tgattcagct cagccttaca agtggcgggg gaaagcacac agacttctag 240
gccactggga agaagcagcc catgatcttg cccttgccctg taaattggat tatgatgaag 300
atgctagtgc aatgctgaaa gaagttcaac ctagggcaca gaaaattgca gaacatcgga 360
gaaagtatga gcgaaaacgt gaagagcgag agatcaaaga aagaatagaa cgagttaaga 420
aggctcgaga agagcatgag agagcccaga gggaggaaga agccagacga cagtcaggag 480
ctcagtatgg ctcttttcca ggtggctttc ctgggggaat gcctggtaat tttcccgag 540
gaatgcctgg aatgggaggg ggcatgcctg gaatggctgg aatgcctgga ctcaatgaaa 600
ttcttagtga tccagaggtt cttgcagcca tgcaggatcc agaagttatg gtggctttcc 660
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ccagtgtacc tctgaccttc tcatcaagag agctggggtg ctttgaagat aatccctacc 900
cctctccccc aaatgcagct gaagcatttt acagtgggtt gccattaggg tattcattca 960
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tatgtggttc ctgatgcatt ttgacttgtc tttttaaatg ctttatcttt ttctttaaag 1260
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ttacttttct tgagctaaag acaggctttt tccaccggca tcatcactgc tatcatcatt 1680
aacagcgtaa ttatacaagc atatttaatg ctgagtttaa tttaatatgt aatacatatg 1740
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aaccgatttt ttttatccaa tgtgaattat aaatgagata atccacagtt attcattgtg 2040
gagttgttga gactatgaaa gactcattgt ctttgtattc agctcttaaa tagtgtaact 2100


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gcatttgagc ttgtgtgttc ttttggttaat gtgtagagtt ctcctttctc gaaattgcc 2580
gtgtgtactt ggcttaactc aagaacagtt tcttctggat tccttatttg atttatttaa 2640
cctaattata ttctaataat gcaaatatta ccataagtgg gtaaaagtaa aattcctctt 2700
ctgaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaggggggg gg 2742
```

<210> 201

<211> 1417

<212> DNA

<213> Homo sapiens

<400> 201

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aatgtcatag gtatgcataa gatgactcca ccaattaaag atctgctgcc tagactcacc 180
cccatcttaa agaacagaca tgaaaaagta caagagaatt gtattgatct tgttggtcgt 240
attgctgaca ggggagctga atatgtatct gcaagagagt ggatgaggat ttgctttgag 300
cttttagagc tcttaaaagc ccacaaaaag gctattcgta gagccacagt caacacattt 360
ggttatattg caaaggccat tggccctcat gatgtattgg ctacacttct gaacaacctc 420
aaagttcaag aaaggcgaga cagagtttgt accactgtag caatagctat tgttgagaa 480
acatgttcac cctttacagt actccctgcc ttaatgaatg aatacagagt tcctgaactg 540
aatgttcaaa atggagtgtt aaaatcgctt tccttcttgt ttgaatatat tggtgaaatg 600
ggaaaagact acatttatgc cgtaacaccg ttacttgaag atgctttaat ggatagagac 660
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cttgctttga tttggtgatg taaactttta aacattgcag atcagtgtag aactggtc 1140
agaggaagag ctagaaatcc agtagcatga tttttaaata acctgtcttt gtttttgatg 1200
ttaaacagta aatgccagta gtgaccaaga acacagtgat tatatacact atactggagg 1260
gatttcattt ttaattcatc tttatgaaga tttagaactc attccttggt tttaaaggga 1320
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ctcgaggggg gcccgtacct aattcgccgt atagtga 1417
```

<210> 202

<211> 1512

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (855)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1512)

<223> n equals a,t,g, or c

<400> 202

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<210> 203

<211> 419

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (384)

<223> n equals a,t,g, or c

<400> 203

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<210> 204

<211> 2833

<212> DNA

<213> Homo sapiens

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<221> misc feature

<222> (2802)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2822)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2831)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2832)

<223> n equals a,t,g, or c

<400> 204

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<210> 205

<211> 5830

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (5584)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (5585)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (5821)

<223> n equals a,t,g, or c

<400> 205

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<211> 755

<212> DNA

<213> Hom sapiens

<220>

<221> misc feature

<222> (368)

<223> n equals a,t,g, or c

<400> 206

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<210> 207

<211> 1996

<212> DNA

<213> Homo sapiens

<400> 207

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aggatggggc tcccagctcc tttctcctgt gaatggaggc agagacctcc aataaagtgc 1920
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<210> 208

<211> 1668

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1505)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1565)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1598)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1620)

<223> n equals a,t,g, or c

<400> 208

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<210> 209

<211> 2250

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (23)

<223> n equals a,t,g, or c

<400> 209

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accttcaagc agcgcgcgac cttcgaacaa agagtagaag atgtccgact tattcgagag 240
cagcatccaa ccaaaatccc ggtgataata gaacgataca agggtgagaa gcagcttcct 300
gttctggata aaacaaagtt cttgttacct gaccatgtca acatgagtga gctcatcaag 360
ataattagaa ggcgcttaca gctcaatgct aatcaggcct tcttcctggt ggtgaacgga 420
cacagcatgg tcagcgtctc cacaccaatc tcagaggtgt atgagagtga gaaagatgaa 480
gatggattcc tgtacatggc ctatgcctcc caggagacgt tcgggatgaa attgtcagt 540
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gaaaaaaaaa aacatgctga ggggtgacct atatcccatg tgagtgggtca ctttatttat 2160
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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2250
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<210> 210

<211> 838

<212> DNA

<213> Homo sapiens

<400> 210

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aagccagata tagatgcctg ggaattgcgt aaagggataa acacacttgt tacctatgat 360
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atctaccctt atgtcatcca ggaacttaga ccaactttaa atgaactggg aatctccact 540
ccggagggaac tgggccttga caaagtgtaa accgcatgga tgggcttccc caaggattta 600
ttgacattgc tacttgagtg tgaacagtta cctggaaata ctgatgataa catattacct 660
tatttgaaca agttttcctt tattgagtac caagccatgt aatggtaact tggactttaa 720
taaaagggaa atgagtttga actgaaaaaa aaaaaaaaaa aaactcatat agactgaagc 780
gcggtgatta aataatgaaa gagttcgacg cggccgggaa tttaggagggt aaatatcc 838
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<210> 211

<211> 1213

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1206)

<223> n equals a,t,g, or c

<400> 211

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gaaccgcgtt cgggcctcag agcgtctggt gagatgctgt tgccgctgct gctgctgcta 180
cccatgtgct gggcgcgtga ggtcaagagg ccccggggcg tctccctcac caatcatcac 240
ttctacgatg agtccaagcc ttccacctgc ctggacgggt cggccaccat cccatttgat 300
cagggtcaacg atgactattg cgactgcaaa gatggctctg acgagccagg cacggctgcc 360
tgtcctaata gcagcttcca ctgcaccaac actggctata agcccctgta tatcccctcc 420
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aaccgggtca acgatggtgt ttgtgactgc tgcgatggaa cagacgagta caacagcggc 480
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atggccgagg tccccgcga agggttccgt ctgaagaaga tccttattga ggactggaag 600
aaggcacggg aggagaagca gaaaaagctc attgagctac aggctgggaa gaagtctctg 660
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gccaaagagc agcaccagaa gctgtgggaa gagcagctgg ctgctgccaa ggcccaacag 780
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ccagccctgt ccctgccacc cctcctagtg gggactagtg aatgacttga cctgtgacct 1140
caatacaata aatgtgatcc cccacccaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1200
aaaaanaaaa aaa 1213
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<210> 212

<211> 969

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (922)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (955)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (958)

<223> n equals a,t,g, or c

<400> 212

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gttgatgta aaagctaagg aaaccttttc ttttgaaga tcagtataaa catgctgctt 180
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gtgttgctga agttttcgcc cttggattgc tggggtgata ttggtgacaa actctgtagg 360
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tgacttgatt tgttataagt ttggaagggt atagtgttgg caccattctt attgatcaca 480
cttttaggga ttcttgaaga aaagggaagc aaaacataca cacacacccc cacccaatct 540
aacagcgtat tcaagcagat tccacgaatc ctcggccag gtttaataaa ggcaggaaaag 600
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ctcaagaaaa actggcagaa tgtccgggcc ttatatatca agagcaccat gggcaagccc 840
cagcgcctat attaaggcac atttgaataa attctattac cagttaaaaa aaaaaaaaaa 900
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aaaaaaaaa aaaaaaaaaa anaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaanccncg 960
gggggggggg 969

<210> 213

<211> 1694

<212> DNA

<213> Homo sapiens

<400> 213

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gcgatggcca aggtgtcggg gctgaacgtg gcggctcctg agaaccggag ccctttccac 180
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aaaaaaaaa aaaa 1694

<210> 214

<211> 1210

<212> DNA

<213> Homo sapiens

<400> 214

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<210> 215

<211> 1776

<212> DNA

<213> Homo sapiens

<400> 215

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1776

<210> 216

<211> 1418

<212> DNA

<213> Homo sapiens

<400> 216

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gccatacaga attgtgtatt caccagcatc atgaaacagt tgtggtcttt tgagttgacg 180
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tgctccttac atccagtctg ttcttgttca tagtgagaat cctgtgttcc cacttcagt 1260
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<210> 217

<211> 2200

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (2188)

<223> n equals a,t,g, or c

<400> 217

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tgcttgggga cgcaaggccc tggacattgc tgagaacgag atgccgggcc tgatgcgtat 180
gcgggagcgg tactcgccct ccaagccact gaaggcgcc cgcctcgtg gctgctgca 240
catgaccgtg gagacggccg tcctcattga gacctcgtc accctgggtg ctgaggtgca 300
gtggtccagc tgcaacatct tctccacca ggaccatgc gcggctgcca ttgccaaggc 360
tggcattccg gtgtatgcct ggaaggcgca aacggacgag ggtacacctg ggtgcattga 420
```

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gcagaccctg tacttcaagg acgggcccct caacatgatt ctggacgacg ggggacgacct 480
caccaacctc atccacacca agtaccgcga gcttctgccca ggcatccgag gcatctctga 540
ggagaccacg actgggggtcc acaacctcta caagatgatg gccaatggga tcctcaaggt 600
gcctgccatc aatgtcaatg actccgtcac caagagcaag ttgacaacc tctatggctg 660
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<210> 218

<211> 1853

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (890)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1794)

<223> n equals a,t,g, or c

<400> 218

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tgggtggcgc cgtgaagagc cttcaggcgc tgggcgaggt catcgaggct gaacttcggt 180
ccaccaagca ctgggagctt actgcggagg gcgaggagat tgcccgggag ggcagccatg 240

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aggcccggtgt gtttcgaagc attccccag agggcctggc ccagagcgag cttatgcgac 300
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agagtgcggc tgacgggccc cgggtgttcc gagtgggtga cagcatggag gatgaggtgc 420
agcggcggct ccagctggtc cgggggggac aggtgagaa gctgggggag aaggagagga 480
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aaggcagtgct ctttagtacc agcatctcca agcaagagac agagctgagc ccagagatga 600
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gcccccaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 1853
```

<210> 219

<211> 1093

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1090)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1091)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1092)

<223> n equals a,t,g, or c

<400> 219

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gcgtgcggcg tctacacccc gcgtgcgcc aggggctgcg ctgctatccc caccggggt 60
ccgagctgcc cctgcagcgc tggatcatgg cgagggcact tgtgagaagc gccgggacgc 120
```



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cgagtatggc gccagcccgg agcagggtgc agacaatggc gatgaccact cagaaggagg 180
cctggtggag aaccacgtgg acagcaccat gaacatgttg ggcgggggag gcagtgctgg 240
ccggaagccc ctcaagtcgg gtatgaagga gctggccgtg ttccgggaga aggtcactga 300
gcagcaccgg cagatgggca aggggtggcaa gcatcacctt ggcctggagg agcccaagaa 360
gctgcgacca cccctgcca ggactccctg ccaacaggaa ctggaccagg tcctggagcg 420
gatctccacc atgcgccttc cggatgagcg gggccctctg gagcacctct actccctgca 480
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cgggcagcgt ggggagtgtc ggtgtgtgaa cccaacacc ggaagctga tccagggagc 600
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aatttttatt tttgaacccc tgtgtccctt ttgcataaga ttaaaggaa gaaaagtaaa 1020
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1080
aaaaaaaaan nna 1093

```

<210> 220

<211> 2155

<212> DNA

<213> Homo sapiens

<400> 220

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gccctgagta ggggtgtgacc tccgcagccg cagaggagga gcgcascgg cctcgaagaa 180
cttctgcttg ggtggtgaa ctctgatctt gacctagagt catggccatg gcaaccaaa 240
gaggtactgt caaagctgct tcaggattca atgccatgga agatgccag accctgagga 300
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acaccgcca gcgccaggag atcaggacag cctacaagag caccatcggc agggacttga 420
tagacgacct gaagtcagaa ctgagtggca acttcgagca ggtgattgtg gggatgatga 480
cgccacggg gctgtatgac gtgcaagagc tgcgaagggc catgaaggga gccggcactg 540
atgagggtcg cctaattgag atcctggcct cccggacccc tgaggagatc cggcgcataa 600
gccaaaccta ccagcagcaa tatggacgga gccttgaaga tgacattcgc tctgacacat 660
cgttcatgtt ccagcgagtg ctggtgtctc tgtcagctgg tgggagggat gaaggaaatt 720
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catgttttta aaagattact ttctactttg tgtttcacag acattgaata tattaaatta 1500
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ggtcagtaag aatgcccatc cagtttttcta tatttcatag tcaaagcctt gaaagcatct 1680
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gggagacttc cttcatcaca tcttatgttg aaatcacttt ctgtagtcaa agtataccaa 1800
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ccaaacataa atgctgaaca ttccatatta ttatagttaa tgtcttaatc cagcttgcaa 1920
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atntagtatg atataaagaa aacttttttg tgctaaaaat acttttttaa atcaattttg 2040
ttgattgtag taatttctat ttgcaactgt cctttcaact ccagaaacat tctgaagatg 2100
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<210> 221

<211> 1264

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (4)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (5)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (7)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (17)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (22)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (125)

<223> n equals a,t,g, or c

<400> 221

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gtgantgtaa catctgtcaa agatgcaaaa atagcagtgt actcttggtc ttttgatggc 180
atgataacag aaactaaggg aacagtgttg ataaagactg ctgaagaatt gatgaatttt 240
agtaaggggag aagaaaacct catggatgca caagtcaaag ctattgctga tactgggtgca 300

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aatatcatgt tagtgaggct aaactcaaaa tgggatctcc gaagactttg taaaactgtt 420
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gcagtacatc aagaaggaaa taaaaacgtt ggattagata ttgaggctga agtccctgct 900
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acctgatgtt ttcttattct ccttaaatta agagttatct tgtgtttgta ttcttggtg 1200
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aaaa                                             1264

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<210> 222

<211> 2085

<212> DNA

<213> Homo sapiens

<400> 222

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acgtagcatt tgcacccctc caaagccatc tttgtaaagg aaaacgtatt tgtaattgaa 180
tccagaagaa tttagttaca catagacata actcttcaac cttaactatg gcaatacatt 240
tgtgtcttaa ctgttacata gcagtatcac cacttaccag gatccaaatc gaaataataa 300
aagctgtctc catagttaa aatcgaatag tgccatcatc acagtatatt agtcaaatag 360
aagcttcac agaaatgtat cccacataga gttttaagac ttggattctc ttctgccctt 420
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atcctgacct cctgttaaat gacatcagtt tccccctctg agcaacagac tgcttgtctt 600
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gaataggggtc atactcctaa gactgatggg gtgttgatct tctaggacat cacttgttta 720
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<210> 223

<211> 2921

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1609)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2919)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2920)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2921)

<223> n equals a,t,g, or c

<400> 223

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agggtgcccc gaaggggata gacttccctg gggcgtgggg agagcaggag gctcaagtga 240
gatgctcttg gtgctagaaa ccgccctccc tcatgcctgg ggtctctccc tgccaggacc 300
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gcacgtggta cccaacgagg tgggtgtgca gagactcttc caggtaaaag ggcggcgtgt 780
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cctggacctg ggcaacaaca tccaccagt gtgtggttcc aacagcaatc ggtatgaaag 900
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<223> n equals a,t,g, or c

<400> 224

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<211> 3035

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<213> Homo sapiens

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<220>

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<222> (2959)

<223> n equals a,t,g, or c

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<211> 1511

<212> DNA

<213> Homo sapiens

<400> 226


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<211> 2239

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

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<223> n equals a,t,g, or c

<400> 227

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<210> 228

<211> 2346

<212> DNA

<213> Homo sapiens

<400> 228

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<210> 229

<211> 2246

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (2235)

<223> n equals a,t,g, or c

<400> 229

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ggctgtgcct tctgaagcag tatctattca caatgaagtt gcagtctccc gaattccagt 180
cacttttcac agaaggactg aagagtctga cagaattatt tgtcaaagag aatcacgaat 240
taagaatagc aggaggagca gtgagggatt tattaaatgg agtaaagcct caggatatag 300
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atthtgagat tactacacta cggattgatg tcaccactga tggaaagacat gctgaggtag 480
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acaaagtcag taaaaatgtt gatggttttt caccaaagcc agtgactctt ttggcctcat 960
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```

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gttcagaccc attgaaaccc tatcaagact tcattataga ttctagggaa cctgatgcac 1140
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<210> 230

<211> 2002

<212> DNA

<213> Homo sapiens

<400> 230

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ttttctgcct atgctggaat agctccctct tctggtcctg gctcaggggg ctgggatttt 1920
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aaaaaaaaaa aaaaaaaaaa aa                                2002
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<210> 231

<211> 994

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (394)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (853)

<223> n equals a,t,g, or c

<400> 231

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ccaataccat tgactataaa agctatTTTT gaaagattca agaacaggaa aaagagatat 480
aaaaaaaaaga aaaagaggag gtaccagcca acaggaagac cacggggaag accagaagga 540
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cacctgaaag aatcattgaa gcaaatgaat gttggtgaag atttagaaaa tgaagatttt 780
gacagtcgta gatacaaatt tttggatgat gatggatcca tttctcctat tgaggagtca 840
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<210> 232

<211> 486

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature
 <222> (49)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (440)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (485)
 <223> n equals a,t,g, or c

<400> 232
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 cgacccacgc gtccgggaac agccttctcc tgccctctct gcacctggac aactcaactc 120
 ctgccaaagt gtccctgccag cagaaccagc agcagtgcca acccccaccc aagtgtccct 180
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 gcgccaccac cgatgccggc gccagaggy ccaactcctgt gacagggcag tggtcagcaa 360
 ggcgrggggt ctggstgckg caygggtctg ggggctgctg ctgatccaga tcctgatgct 420
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 gaagnc 486

<210> 233
 <211> 2081
 <212> DNA
 <213> Homo sapiens

<400> 233
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<210> 234

<211> 516

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (490)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (498)

<223> n equals a,t,g, or c

<400> 234

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ctccaaccg ggggtgcctct gctgtgggtc ttcgggtgta aggcgagts c tggctctttg 180
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ccaagatctt catcacacac cttcatggag accatttctt tggccttcct gggctcctct 300
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ctgtaggctt cgggacttta tctggcgaac catggaactc tctcamacgg gagctggtct 420
tccattatgt ggttcatgaa ctggttccta cagcagatca atgtcctgca gaaggaacta 480
aaagaatttn cgcatgtnaa tagagcagac agtcct 516

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<210> 235

<211> 1129

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (807)

<223> n equals a,t,g, or c

<400> 235

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gagaggagg gaggaccag atcttttgag agctgagggt tgagggcatt gagccaacac 180
acagatttgt cgcctctgtc ccgaagaca cctgcaccct ccatgcggas caagatgggg 240
aatggaactg aggaagatta taactttgtc ttcaagggtg tgctgatcgg cgaatcaggt 300
gtggggaaga ccaatctact ctcccgattc acgcgcaatg agttcagcca cgacagccgc 360
accaccatcg gggttgagtt ctccaccgcg actgtgatgt tgggcaaccg tgctgtcaag 420
gctcagatct gggacacagc tggcctggag cggtagcgag ccatcacctc ggcgtactat 480
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tgttttatat caaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1129
```

<210> 236

<211> 1045

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (973)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1001)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1014)

<223> n equals a,t,g, or c

<400> 236

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cagcctcccg ggcagccacc accaccgcag ctgtcttccc accgtggaga cctcatcacg 480
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aatgcttctg gagccaggaa aggca 1045

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<210> 237

<211> 690

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (666)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (678)

<223> n equals a,t,g, or c

<400> 237

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ggaggagggt ctgccacagc tctccgcacc tctctctctc cagggcagcc tgtgagcagc 60
aagctgtggc tctgactctg caggaggaca gagcatccct gacgctttca ggggggcccct 120
cggcactggc ctttgacctc tccaaggtag caggcccaga ggcagcccc aggctgyggg 180
cgctgacact gggcctggca aaacgcgtgt ggagcctgga gcggcgactg gcagctgcag 240
aagagacagc tgtcagcccc aggaagagcc cccggcctgc agggcctcag ctcttcttac 300
cagaccaga tcccagaga ggtggccctg gacctggagt caggaggcgg tgtccaggag 360
agtcgctcat caaccccggtt ttcaagagta agaaaccagc tgggtggcgtg gacttcgatg 420
agacctgaag gtgcagcaca agcgtggccc cgcggggagt ccgcctatga ggggagaggc 480
agtctttgag gccccatca gagaccccc gccaccacct ccacctgcct gtcctggggc 540
aggactaaca cggctcctca aattccttcc ctgtcaaata aacagctccc ttggttggaa 600
aaaaaaaaaa aaaaaaaaaa agtttttttt aattttaagg cgggccaaaag ttttttttcc 660
tttttngttg aagggttnat tttttagttt 690

```

<210> 238

<211> 1873

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (568)

<223> n equals a,t,g, or c

<400> 238

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cccgggctca gtatgtggcg ccttcctcgc gcgctgtgtg tgcacgctgc aaagaccagc 60
aagctctctg gaccttggag caggcctgcc gccttcatgt ccactctcct catcaatcag 120
ccccagtatg cgtggctgaa agagctgggg ctccgcgagg aaaacgaggg cgtgtataat 180
ggaagctggg gagggccggg agaggttatt acgacctatt gccctgctaa caacgagcca 240
atagcaagag tccgacaggc cagtgtggca gactatgaag aaactgtaaa gaaagcaaga 300
gaagcatgga aaatctgggc agatattcct gctccaaaac gaggagaaat agtaagacag 360
attggcgatg ccttgccggg gaagatccaa gtactaggaa gcttggtgtc tttggagatg 420
gggaaaatct tagtggaagg tgtgggtgaa gttcargagt atgtggatat ctgtgactat 480
gctgktggtt tatcaaggat gattggagga cctatcttgc cttctgaaag atctggccat 540
gcactgattg agcagtggaa tcccgtangc ctggttggaa tcatcacggc attcaatttc 600
cctgtggcag tgtatggtt gaacacgcca tcgccatgat ctgtggaaat gtctgcctct 660
ggaaaggagc tccaaccact tccctcatta gtgtggctgt cacaagata atagccaagg 720
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gaggagaaaa gcacactggt ggtggcaggg agtctggcag tgatgcctgg aaacagtaca 1560
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tttgagaag acaaagaaaa ttaaagtttt ccctgaataa atgcattatt atgactgtga 1740
cagtactaa tccccctatg accccaaagc cctgattaaa tcaagagatt ctttttttaa 1800
aaatcaaaat aaaattgtta caacatagcc atagttacta aaagatgagt taggtggatt 1860
tttattatgg tca 1873
```

<210> 239

<211> 905

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (873)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (874)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (897)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (898)

<223> n equals a,t,g, or c

<400> 239

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tgcgggtcccc ettctaggtc gacccacgcg tccgggtgggg ccccgggcgg cgttgaccat 60
gacccagcag ggcgcggcgc tgcagaacta caacaacgag ctggtcaagt gcatagagga 120
gctgtgccag aagcgggagg agctgtgccg gcagatccag gaggaggagg acgagaagca 180
gcggctgcag aatgagggtga ggcagctgac agagaagctg gcccgcgtca acgagaacct 240
ggcacgcaag attgcctctc gcaacgagtt cgaccggacc atcgcggaga cggaggccgc 300
ctacctcaag atcctggaga gctcccagac tttgctcagc gttctcaaga gggaagctgg 360
gaacctgacc aaggctacag ccccagacca gaaaagtagc ggcggcaggg acagctgacc 420
agaccacggg cagggcctgc ctccgtgtgc ccctcagctc agcccagca agtgtgtgct 480
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ggggcaggtg ccagcctcca ctggcatcag tgacaagccc agggcacagc ccacccgggg 600
gtcctcgctt catgctcaca caggctatgg ggatgggtggg ctccagggtca gctctgcaag 660
gggcttgtct ctgtggcacc cacactcctg ccctgccagg gaggctctgg ttgtctgagc 720
accatggggg cccctcacc ttgtccctcc tcagccagca gaggcccagg gcaagggaca 780
ggaggacagg ggttctcctt caccacagaa cccaaacctc aggtctcacc cctgtggcct 840
gtgattatga ataaagatta tctttgtaaa gannaaaaaa aaaaaaaaaa aaaaccnngg 900
ggggg                                           905
```

<210> 240

<211> 1484

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1457)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1471)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1480)

<223> n equals a,t,g, or c

<400> 240

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agatatataa atatacagat atacaaataa ggggtgaagat ggagggaatc tgataaagac 180
atcttataaa ttcaacagac acaaaagaat ttgatctccc ataagcaact gtgaaattac 240
aataacagat cctgggaagt tctacaattc taattcagtt ttttcaaggg ggaacatggc 300
```

```

aaaggtgttc agtttcatcc ttgttaccac cgctctgaya atgggcaggg aaatttcggc 360
gctcgaggac tgtgccagag agcagatgcg gctcagagcc caggtgcgcc tgcttgagac 420
ccgggtcaaa cagcaacagg tcaagatcaa gcagcttttg caggagaatg aagtcagtt 480
ccttgataaa ggagatgaga atactgtcgt tgatcttgga agcaagaggc agtatgcaga 540
ttgttcagag attttcaatg atgggtataa gctcagtgga ttttacaaaa tcaaacctct 600
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aattcagaga cgatctgatg gcagtgaaaa ctttaacaga ggatggaaag actatgaaaa 720
tggccttgga aattttgtcc aaaaacatgg tgaatattgg ctgggcaata aaaatcttca 780
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tcatgataac tgttgtgagt agtgcttttc attcttctca cttgcctttg ttacttaatg 1380
tgctttcagt acagcagata tgcaatatcc accaaataaa tgtagactgt gttaawaaaa 1440
aaacaacaaa tatgaanaaa aaaaaaaaaa nggggggctn tttt 1484

```

<210> 241

<211> 1521

<212> DNA

<213> Homo sapiens

<400> 241

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ggtttggtgtg tttctgtttt gtttctctcc ccctgcaggg ctgtttkcgg ggtgggggtg 180
ggggttcgct atgtcggatg acgattcgag ggccagcacc agctcctcct catcttcgtc 240
ttccaaccag caaaccgaga aagaaacaaa caccccaag aagaaggaga gtaaagtcag 300
catgagcaaa aactccaaac tcctctccac cagcgccaag agaattcaga aggagctggc 360
ggacatcact ttagaccctc cacctaattg cagtgtggtg cccaaaggcg ataacatcta 420
tgaatggaga tcaaccattc tagggcctcc aggatccgtg tatgagggtg gtgtattctt 480
tctcgatatc actttttacac cagaatatcc cttcaagcct ccaaaaggta catttcggac 540
aagaatctat cattgttaata ttaacagtca aggtgttatt tgcttggaca tattgaaaga 600
taattggagt ccagcactaa ccattttctaa agtcctcctt tctatctgct cacttcttac 660
agactgtaat cctgccgacc ccttggtggg aagtattgcc actcagtata tgaccaacag 720
agcagaacat gacagaatgg ccagacagtg gaccaagaga tacgctacat aaattggggg 780
ttcacaattc ttacattatt tgtctgtcac agaagagagc tgcttatgat tttgaagggg 840
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tatttcctaa gattttgttg taacttaagg tatcttgcta cagtagacag aattggtaat 960
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aatcaggact tgtgaaaacc tgtagtgaat taccttaagc tgtaactaa ctgtaaggcg 1380
tggaatagga gttgctcagt ggattggttc tatgttgtgg actacttaag tctgcatttg 1440

```

ttactgtgct aataaacaat attaaaaacc acctaataaa cactgctgtg ttcatttact 1500
 tttcttttgc cttttggttg c 1521

<210> 242

<211> 1144

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1093)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1105)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1106)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1139)

<223> n equals a,t,g, or c

<400> 242

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 cacattgtac agtagtacct ttgaagcagc ctactctaca cattgcagac aaagatccaa 120
 tcccagagga gcaggaatta gaagcttatg tagatgatag agatattgat agtgatttca 180
 gaaaggatga tttttattac ttgtctcaag aagacaaaga gagacagaag cgtgagcatg 240
 aagaatccaa gaggggtgctc caagaattaa aatctgtgct gggattttaa gcttcagagg 300
 cagaaaaggca gaagtggaag caacttctat ttagtgatca tgtgtttctt catatagctt 360
 taaaattatg ctattgacat tatgggaaag atttatcaat gagagaaatg tgtctctttt 420
 tcagccgtgt tgaaatcctt gtctcctgta gaccagtggt aaccataaag taattcagaa 480
 ccatcaatga attcagatat gggaaaagtc agtaaaaatg atactgaaga ggaaagtaat 540
 aaatccgcca caacagacaa tgaaataagt aggactgagt atttatgtga aaactctcta 600
 gaaggtaaaa ataaagataa ttcttcaaat gaagtcttcc cccaaggagc agaagaaaga 660
 atgtgttacc aatgtgagag tgaagatgaa ccacaagcag atggaagtgg tctgaccact 720
 gcccctccaa ctcccagga ctcattacag ccctccatta agcagaggct ggcacggcta 780
 cagctgtcac cagattttac cttcactgct ggccttgctg cagaagtggc tgctagatct 840
 ctctccttta ccaccatgca ggaacagact tttggtgatg aggaggaaga acaaataata 900
 gaagaaaata aaaatgagat agaagaaaag taagaaccaa gattcatatg aagtgatatt 960
 agattgttcc ttttacaaaa gtgttttagct tcaagactgg aaagggaata tgagtgttaag 1020
 tttactatat ataaagctaa gatgtggatt tacaggaaga accctgggtt gaataactga 1080
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 cccg 1144

<210> 243

<211> 934

<212> DNA

<213> Homo sapiens

<400> 243

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tttcatgtca tgagaccagt aggttttcag ctatatgccca aggagatggc acgtggagtc 120
cccgaacacc atcatgtgga gacatttgca attttcctcc taaaattgcc catgggcatt 180
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gctacattct ggtcggacag gcgaaactct cctgcagtta ttcacactgg tcagctccag 300
cccctcaatg taaagctctg tgtcggaaac cagaattagt gaatggaagg ttgtctgtgg 360
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agtgtgagtg ggagaccccc gaaggtctgt aacaagtgtc cacaggcaaa agactcatgc 540
agtgtctccc aaaccagag gatgtgaaaa tggccctgga ggtatataag ctgtctctgg 600
aaattgaaca actggaacta cagagagaca gcgcaagaca atccactttg gataaagaac 660
tataatTTTT ctcaaaagaa ggaggaaaag gtgtcttgct ggcttgcttc ttgcaattca 720
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tctagaaatg ataatttgct aaagtttagt gctttgagat tgtgaaatta ttaatcatcc 840
tctgtgtggc tcatgttttt gcttttcaac acacaaagca caaatttttt ttcgattaaa 900
aatgtatgta taaaaaaaaa aaaaaaaaaa tcga 934
```

<210> 244

<211> 915

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (210)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (243)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (244)

<223> n equals a,t,g, or c

<400> 244

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ccgcctgccc tggagcagga gcgtattctg aacccctgc tagaccgtgt caggaccgcc 120
gaccaccacc agctgcgctc actgactggc ctcatccgaa acctgtctcg gaacgctagg 180
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gtnnnggtga gaagtygccc ccagccgagg tgctggtcaa catcatagct gtgctcaaca 300
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agctcatctt catcaagaag aagcgggaca gccccgacag tgagaagtcc tccccggcag 420
catccagcct cctggccaac ctgtggcagt acaacaagct ccaccgtgac ttycgggcga 480
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```

aggctatcgg aaggaggact tcctgggccc ataggatgaag ccttctggag gagaaggatga 540
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gagaaggcta atgacggagg ggccccctgc tggggcccct gtgtgcatct ttgagggtcc 660
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gtgggggttg gctgtggcct ggcagtatct tgggatatgcc agcactggga ataaagatgg 840
ccatgaacag tcaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 900
aaaaaaaaaa aaac

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<210> 245

<211> 1276

<212> DNA

<213> Homo sapiens

<400> 245

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acaagatgaa gcaagatgcc tcaagaaatg ctgcctacac tgtggattgt gaagattatg 180
tgcattgtgt agaatttaat ccctttgaga atggggattc aggaaacctt attgcatatg 240
gtggcaataa ttatgtggtc attggcacgt gtacgtttca ggaagaagaa gcagacgttg 300
aaggcattca gtataaaaca cttcgaacat ttcaccatgg agtcagggtt gatggcatag 360
cttgaggccc agagactaga cttgattcat tgcctccagt aatcaaattt tgtacttcag 420
ctgctgatat gaaaattaga ttatttactt cagatcttca ggataaaaaat gaatataagg 480
tttttagagg ccataccgat ttcattaatg gtttggtggt tgatcccaaa gaaggccaag 540
aaattgcaag tgtgagtgac gatcacacct gcaggatttg gaacttgga ggagtgcata 600
cagctcattt tgttcttcat tctcctggca tgagtgtgtg ctggcatcct gaggagactt 660
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<210> 246

<211> 3366

<212> DNA

<213> Homo sapiens

<400> 246

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ctggtgcccc ttgtgcctga ccttcaagat gtggctcagt tgcgttcccc tctgcccagg 180
ggcattattc gaattcacct gctggctgct cgagggtgta gttccaagga caaatatgtg 240
aagggcctga ttgagggcaa gtcagacca tatgcacttg tgcgtttggg taccagaca 300
ttctgcagtc gtgtcattga tgaagaactc aaccacaggt ggggagagac ttatgaggtg 360
atggtacacg aggtcccagg gcaggagatt gaagtggagg tggtcgacaa ggatccagat 420

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aaagatgact ttctgggcag aatgaagctg gatgtagga aggtgttaca ggctagcgtt 480
ctggatgatt gggtccctct acaaggtggg caaggccaag ttcacttgag gctagaatgg 540
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tcctctcgac cagatccccc gtcagctgcc atcttagttg tctacctgga tcgggcccag 660
gatcttcctc tgaagaaggg gaacaaggaa cccaacctta tggtagaact gtcaattcag 720
gatgtgactc aggagagcaa ggctgtctac agtaccact gcccagtggt ggaggaagcg 780
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atttg 3366

<210> 247
<211> 2148
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (1259)
<223> n equals a,t,g, or c

<400> 247
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cgtggcgcca gcggaggcag gttgmtgtgt ttgtgcttcc ttctacagcc aatatgaaaa 180
ggcctaagtt aaagaaagca agtaaacgca tgacctgcca taagcggat aaaatccaaa 240
aaaaggttcg agaaccatcat cgaaaattaa gaaaggaggc taaaaagcrg ggtcacaaga 300
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aagctgagct aaggaaacag aggcttgaag aactaaaaca gcagcagaaa cttgacaggc 420
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tggaacctat ggaaaaggag tttgggcttt gcaaaactga gaacaaagcc aagtcgggca 540
aacagaattc aaagaagctg tactgccaag aacttaaaaa ggtgattgaa gcctccgatg 600
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gcctcattag cttactattg ccatccccct acatcttggc ctctctctcc atattttaat 1500
gagagtattg tggtagacat gaaaagcggc ttcaatcttg aagaactgga aaagaacaat 1560
gcacagagca taagagccat caagggccct catttgGCCa atagcatcct tttccagtct 1620
tccggtctga caaatggaat aatagaagaa agggacatac atgaagaatt gccaaaacgg 1680
aaagaaagga agcaggagga gagggaggat gacaaagaca gtgaccagga aactgttgat 1740
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tgcatgagct gtgtaaattt tgtgaatatg tattatatta aaaccaggca acttggaatc 2040
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aaaaagaaga tacctattaa aaaaaaaaaa aaaaaaaaaa aaaaaaaa 2148

<210> 248
<211> 2225
<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (14)

<223> n equals a,t,g, or c

<400> 248

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ggccactctt attttgwgc cacacttaat agcttcatcc acgtcctcat gtactcttac 120
tatggtttgt cgtcagtccc ttccatgcgt ccatacctct ggtggkaaga agtacatcac 180
tcaggggcag ctgcttcagt ttgtgctgac aatcatccag accagctgcg gggtcattctg 240
gccgtgcaca ttccctcttg gttggttgta tttccagatt ggatacatga tttccctgat 300
tgctctcttc aaaaacttct acattcagac ctacaacaag aaaggggcct cccgaaggaa 360
agaccacctg aaggaccacc agaatgggtc catggctgct gtgaatggac acaccaacag 420
cttttcaacc ctggaaaaca atgtgaagcc aaggaagctg cggaaggatt gaagtcaaag 480
aattgaaacc ctccaaacca cgtcatctga ttgtaagcac aatatgagtt gtgccccaat 540
gctcgttaac agctgctgta actagtctgg cctacaatag tgtgattcat gtaggacttc 600
tttcatcaat tcaaaacccc tagaaaacgt atacagatta tataagtagg gataagattt 660
ctaacatttc tgggctctct gacccctgcg ctagactgtg gaaagggagt attattatag 720
tatacaacac tgctgttgcc ttattagtta taacatgata ggtgctgaat tgtgattcac 780
aatttaaaaa cactgtaatc caaacttttt tttttaactg tagatcatgc atgtgattgt 840
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ataagagaat cgagaaattt gatagaggta acttgtttaa tgtaaatcta atagtacttg 1620
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catggcatct gtttacattt accttatcaa acctagaatg tgtatattta taaatgtatg 2040
tcttcattgc taggtactaa tttgcagatg tctttacata tttcaatata gaaactataa 2100
cattcaatag tgtgtgtgca aagtgtgctt agctcacctg gatataccta cattgttaaa 2160
tgtctaaaca gtaatcatta aaacattttt gattaaaaaa aaaaaaaaaa aaaaaaaaaa 2220
aaaaa 2225
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<210> 249

<211> 1204

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1197)

<223> n equals a,t,g, or c

<400> 249

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ascactcagg ctggtcctgg ggggtggggct gtaggggaaa gtgctaaagc cgctgagtga 120
agtaagaact ctgctagaga ggaaatggct gcttcatcat catcctcctc agctgggtggg 180
gtcagtgga gttctgtcac tggatctggg ttcatgtgtc cagacctgac cccaccacgg 240
aaagcccttt tcacctaccc caaaggagct ggagagatgt tagaagatgg ctctgagaga 300
ttcctctgcg aatctgtttt tagctatcaa gtggcatcca cgcttaaaca ggtgaaacat 360
gatcagcaag ttgctcggat ggaaaaacta gctgggtttgg tagaagagct ggaggctgac 420
gagtggcggg ttaagcccat cgagcagctg ctgggattca cccctctctc aggttgatac 480
tgcctggatg gtcacctctg gtgcgcagca agtgcaaagc cagtggggga ctttctcaca 540
gcttacatag ccatccagag atccacagct acgtcactga attgttaatg cacatttgta 600
cttggtttct ctgtatctat tcacaggcaa caaatactta tatgtgtgat ctttcaggga 660
atgttttggt tatttggttt taaaagtatt gggaaatcaga ttaagacaat cagtttcaga 720
gaaccaggag gtttgggggt aagagatact caaaaatttt cacaagccaa gtagggcata 780
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ctcttataga catgccaaat gctggcaaaa agaagtgtt tttggatatg gcagcacttg 1080
taaaaaataa gcagtaagca aaatcctttt aaacacagaa atcctgagtt cttctcattg 1140
gtggactcaa gcaattctgt agcaataaaa tcctttgaaa gagctccaaa aaaaaanaaa 1200
aaaa 1204
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<210> 250

<211> 1314

<212> DNA

<213> Homo sapiens

<400> 250

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gcaaaattgg gtccaaaacg cctttgatgg cagctgcaac tttttccgtt ggttggaaca 120
ccttcgcttg ctacagagtc ttggaaaaac cactgaactg gctacttttt aattactatt 180
tgacaacctg ccttcagtct tcagttaata agcaccgaca tatgtttgta aaacaagttg 240
atatggatca tgtcatgaag gctaaatcca tcagagagtt tgataagcga ttcacttcag 300
tcatgttttg ataccaaaca attgatgatt attatactga tgccagtccg agtcctagac 360
tgaagtcatg aggaattcca gtattgtgtc taaattctgt ggatgatgtt ttctcaccca 420
gtcatgctat tccaatagaa actgctaagc aaaatcctaa tgttgctttg gtccttactt 480
cttatggagg ccatattggt tttctggagg gaatctggcc aagacagtcc acttacatgg 540
atcgtgtctt caagcaattt gtgcaagcca tgggttagca tggacatgaa ctctcttaac 600
atgtagttct ttgggtgcat tttgtctgaa ccacaattgt gaaggcagct cagcttagtg 660
cacaaatttt aactgttgta tataaagcaa ataagccagc agatgggtga agagggtccag 720
aatgatatgc aaaaactact ttttagagaa acaaaacaac tttgtagcaa caaattaaat 780
atagtattag attgttactt acgtagattt tatttttact atgccttacc aagtacatcc 840
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tttaattcct cagggtttta atttaaacta gtattttttt agattatttg ttttaggtga 960
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acaacgtgct aaatcctttta tgtattctaa ctttaaaaaga caagtgcac aaagttagac 1140
tgacttctat atgtgctctt ttactctgat aatattaaat taggactaac ttatgtttta 1200
taatgattat aatttacatg cttatTTTTT aaatagtata tgtggacaca tatatatcat 1260
tatattaaaa taaattctac catttttaaT tggaaaaaaa aaaaaaaaaa aaaa 1314
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<210> 251

<211> 1159

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1132)

<223> n equals a,t,g, or c

<400> 251

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ggatggtctc gatctccagg atggtctcga tctcctgacg tcgtgatcca cccgcctcgg 180
cctcccaaaa tgctgggatt acaggtgtga gccactgtgc ccggccaaaa gaacagaaat 240
tattttatcc tgaagtaagc tgtttatatt tgggattata ctgaacctat ttgtccaata 300
acctgagttt tcaaataatt ttagttctat aagtactata attatataaa tattaatgaa 360
ttcagattag ctgaaaggaa aaaaagtaga agcctgacta cttggtgcta actactaaag 420
atTTTggcag aatcaatggt ggatttggct ttctgtctcc ttcccatgc cagcccccca 480
gagtgttctg ccttgtgctg cctcccttca cckggagtgc cacaccctc tctctgccag 540
ttcagctctt cattcttcaa ggctgacct tgtctgacct ttgtgcctct aaaccctggg 600
gccccacctc tcttgggtcc tatgtcaggt gatgtttgtg tttttggTTa tgcccatctc 660
catagccaga ccaagcactc tggaagccag ggttgggtgc ttatttatct gtttgccatg 720
cagaaaatat cttgcacaaa attacctctg ttaaggaatc tgaagctgaa tttagtttgg 780
ctgagtcagg gttgggtttt ttttaagggg ctgtgggggtg aaatgttgac tggaagccac 840
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ctgttcagtg tggctgtccc caccctgct gacmaagact gactgaaatg tnaaataata 1140
cagaccatct caactcaga 1159
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<210> 252

<211> 2488

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (7)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (64)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2334)

<223> n equals a,t,g, or c

<400> 252

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ccgnggacgc	gtgggttgct	cggcagcttg	caaagcctga	caacaccttg	tttgtaaaca	120
gaacactttt	tgatcaggtc	cttgaattcc	tttgtagtcc	tgacgatgac	tcccgcact	180
ctgaaagaca	gcaggtcctt	ttagaattgc	tgacggctgg	aggcatagtt	caatttgaag	240
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gaatgttaga	tacctttaac	tatgaacaaa	ccctgctgga	aacaacaacc	agccttytaa	1260
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<210> 253
<211> 1554
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (6)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (81)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1496)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1523)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1535)
<223> n equals a,t,g, or c

<400> 253
actggnaatc cactactatt tggaaagctg gtccgcctgc aggtaccggt ccggaattcc 60
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cttcgcggct gctcaagatg aaccgactct tcgggaaagc gaaacccaag gctccgccgc 180
ccagcctgac tgactgcatt ggcacggtgg acagtagagc agaatccatt gacaagaaga 240
tttctcgatt ggatgctgag ctagtgaagt ataaggatca gatcaagaag atgagagagg 300
gtcctgcaaa gaatatggtc aagcagaaaag ccttgcgagt tttaaagcaa aagaggatgt 360
atgagcagca gcgggacaat cttgcccac agtcattcaa catggaacaa gccaattata 420
ccatccagtc tttgaaggac accaagacca cggttgatgc tatgaaactg ggagtaaagg 480
aaatgaagaa ggcatacaag caagtgaaga tcgaccagat tgaggattta caagaccagc 540
tagaggatat gatggaagat gcaaataaaa tccaagaagc actgagtcgc agttatggca 600
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tggctgatga agacagttct tatttggatg aggcagcatc tgcacctgca attccagaag 720
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cagtttaaaa gtatttttag ctcgtatgac ttgttttcat tcattaataa taatttgaaa 1080
taaaactaag gaaatggaat cttaaaagtc tatgacagtg taactctaca gtctcaaaat 1140

```

gacctgataa attgataaga caaagatgag attattgggg ctgttcatat tatgattcag 1200
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aattatgaat atttcttgat atttaatgta taggacattt atttatactc aataaatatt 1440
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aggatcccc gagggggggc cangcttacg cgtgncatgc gacgtccaaa gccc 1554

```

<210> 254

<211> 1506

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (43)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1492)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1501)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1506)

<223> n equals a,t,g, or c

<400> 254

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ctggaagaat tcgcgtggca ggagaggcgg ggcaattttg ctgagctttc tcgcgggctt 60
gcagctgcgg caagtgcctg cggcggtctg tcgcgcaagt cagctggcgt gggaactacc 120
ctttgtagct gagaacggct tgtttattgc tacaaagact ctattgacat tggtagcttc 180
agcggcagca gcttcttacg gtataaagct gttgcttcct gaagaggcta caagcatcct 240
tccctaggac tgctgtaagc tttgagcctc tagcaggaga catgcctcgg ggacgaaaga 300
gtcggcgccg ccgtaatgcg agagccgcag aagagaaccg caacaatcgc aaaatccagg 360
cctcagaggc ctccgagacc cctatggccg cctctgtggt agcagcacc cccgaagacg 420
acctgagcgg ccccgaggaa gacccgagca ctccagagga ggctctacc acccctgaag 480
aagcctcgag cactgcccaa gcacaaaagc cttcagtgcc ccggagcaat tttcagggca 540
ccaagaaaag tctcctgatg tctatattag cgctcatctt catcatgggc aacagcgcca 600
aggaagctct ggtctggaaa gtgctgggga agttaggaat gcagcctgga cgtcagcaca 660
gcatcttttg agatccgaag aagatcgtca cagaagagtt tgtgcgcaga gggtagctga 720
tttataaacc ggtgccccgt agcagtcagg tggagtatga gttcttcttg gggccccgag 780
cacacgtgga atcgagcaaa ctgaaagtca tgcattttgt ggcaagggtt cgtaaccgat 840
gctctaaaga ctggccttgt aattatgact gggattcgga cgatgatgca gaggttgagg 900
ctatcctcaa ttcagggtgt aggggttatt ccgcccctta agtagatctg aggcagaccc 960
ttgggggtgt aaaagagagt cacaggtacc ccaaggagta gatgccaggg tcctaagttg 1020

```

```
aaaatgatgt cgattggggg cgggggacac tgtatttgat atttgtgatc agtgatcatt 1080
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ttcctgtcat tgacatttag tataacagtt ttgctaacgt tctaaaatga agtcgttcca 1260
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tttgtgtctg ctgttgtgtg aagattgaca ttaccatga ttttccttag ttactgcaga 1440
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ncccg ncccg 1506
```

<210> 255

<211> 654

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (8)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (632)

<223> n equals a,t,g, or c

<400> 255

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actcacnta ttggaaaagc tggtagcct gcaggtcccg gtccggaatt cccgggtcga 60
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cgtctgccat cggcgccatc ctgcaatcta agccacaatg gtgcgcatga atgtcctggc 180
agatgctctc aagagtatca acaatgccga aaagagaggc aaacgccagg tgcttattag 240
gccgtgctcc aaagtcatcg tccggtttct cactgtgatg atgaagcatg gttacattgg 300
cgaatttgaa atcattgatg accacagagc tgggaaaatt gttgtgaacc tcacaggcag 360
gctaaacaag tgtgggggtga tcagccccag atttgacgtg caactcaaag acctggaaaa 420
atggcagaat aatctgcttc catcccgcga gtttggtttc attgtactga caacctcagc 480
tggcatcatg gaccatgaag aagcaagacg aaaacacaca ggaggggaaa tcctgggatt 540
ctttttctag ggatgtaata catatattta caaataaaat gcctcatgga caaaaaaaaa 600
aaaaaaaaaa aaaaaagggg gsgsggtctag anggtccaag cttacgtacg cgtg 654
```

<210> 256

<211> 1992

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (558)

<223> n equals a,t,g, or c

<400> 256

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gtacaactgg cagtatgtgc actgcctctt cctgtggtgc cgggtcctga gcactgcggg 120
```


ccccagcgaa scctccagcc cttggtctac ccccttgccc aagtcatcat tggctgtatc 180
aagctcatcc ccactgcccg cttctacccg ctgcgaatgc actgcatccg tgccctgacg 240
ctgctctcgg ggagctcggg ggccttcac cgggtgctgc ctttcatcct ggagatgttc 300
cagcaggtcg acttcaacag gaagccaggg cgcagtagct ccaagcccat caacttctcc 360
gtgatcctga agctgtccaa tgtcaacctg caggagaagg cgtaccggga cggcctggtg 420
gagcagctgt acgacctcac cctggagtac ctgcacagcc aggcacactg catcggcttc 480
ccggagctgg tgctgcctgt ggtcctgcag ctgaagtcgt tcctccggga gtgcaagggtg 540
gccaaactact gccggcangt gcagcagctg cttgggaagg ttcaggagaa ctccggcatac 600
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aacttccctg agatcaaacg aaggaagatg gctgacagga aggatgagga caggaagcaa 840
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gccgtcctgg ctgcaggacg cctctcggaa agagatgttc acgtcccagt ggggtgtggac 1680
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caccggggag gatattcggc agcccgggca gtcgcagatc ggaggatgca cctgcaggat 1920
ccccttgga ataaagctct tcagactttt cccttccgag cggaggggag gggccgcgag 1980
ccccaagcgc tg 1992

<210> 257

<211> 2273

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (2271)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2273)

<223> n equals a,t,g, or c

<400> 257

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cgcggcgtcc cccaccctaa gtccacctc cggccgggca tgggtacccg ggcggggcctg 120

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gctcggcctg ggccactca ctggtccaga agcagctgta ggtgccacc aagcccatga 180
cgacgctgct ggccagggtc cagccctatt caggcaggag ctgctcttct ggggtatcgc 240
gateccactta aggatgaggc agacttggtg acaagctggt ctgagcagcg cttccagagc 300
cagaactgag cccagtgaga gcgcaccctg gggcagcctg gattcctggg gtgtccccgg 360
cagccacaca cagccatgca ctacccaact gcactcctct tcctcatcct ggccaatggg 420
gcccaggcct ttcgcatctg cgccttcaat gcccagcggc tgacactggc caaggtggcc 480
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gccggacccc tcccttccat cctcctctcc aaagaasaga ggtcaggaaa aacactggct 2100
gggacgctag aaggggtcatg tgttaactat aatcacattt atggtttgga accatcaccc 2160
caaggtaaaa aaaaaataaa aggtattccc aggtatgttt ggcaaaataa aataaaggta 2220
attaaaaacc taaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaattttgcn ncn 2273

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<210> 258

<211> 1504

<212> DNA

<213> Homo sapiens

<400> 258

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tattcaggga tttttttaaa aagtcaatca gaaaagggat actggagctt cttcatgtat 180
gtaacagcat attaaactgg agacagtgat gaatcagcta caaaggtaat attgtattaa 240
aatcatgttt aagatagctg cttttatgtg tattttatat tgcatgcttt tgtaaaaaaca 300
tgctgggtga tgaaagatta gttttagaga gaaaatgttc atctgtgcag aggatgcatt 360
ttcttccatt aattctggaa aaaacgttca cagttatata tatggtat ttgcaaaagga 420
ctattaatag aaccttttga gatgaattaa tgtaagaata ttttttaaat aggttactg 480

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tcaaattgca actttttttt tagatacaga gtggaaaaca gtgctaagtc atttggcacc 540
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aaaaatgtat tttatcatta aatggcatta ttttaaaggg tgaaaaactg acacagtcaa 660
ttcagaaaaat ggactgaagt ctgaataagg tcattgcatt taaaaagcat ataactgtac 720
ttgactgatg agggaggtgt tactttcatt gtatataggt cttatttcat aaacagatat 780
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ttcataatct atatttaaac aaaattacat cattgcatca tcttttctaa attcatctcc 1380
attaaaactt gccttaagct accagattgc ttttgccacc attggccata ctgtgtgttt 1440
gtttgtttta tttactttca caataaactt ctgtgtagta aaaaaaaaaa aaaaaaaaaa 1500
aaaa

```

<210> 259

<211> 1792

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (107)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (487)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1306)

<223> n equals a,t,g, or c

<400> 259

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tgttccgaat aaaggccatc aggctgggag agaagctcct gccggcnttc aacaccccca 120
cgggaatccc aaagggcgtg gtgagcttca aaagtgggaa ctggggctgg gccacagccg 180
gcagcagcag catcttggcg gagtttggtt ccctgcactt ggaattctta cacctcactg 240
aactctctgg caaccaggtc ttcgctgaaa aggtcaggaa catccgcaag gtcctcagga 300
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tggcgagggg ggattctgga ccacaagatg gggcacctgg cctgtttctc cgggggcatg 600
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catcctccgg ccagaggtgg tggagagcta catgtacctg tggcgacaga cccacaaccc 840
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<210> 260

<211> 2048

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (66)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (67)

<223> n equals a,t,g, or c

<400> 260

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accctagag gagggcgctgc gggggctctgt tttgcatgcg agccaccctct ctggctgctc 180
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gtcccgtcca gaaacgagct cgaagtgggc cccagcccag actgcccccc tgcctgttgc 300
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ttctggggac acttggggtc cacaatccca ggtccatact ctaggttttg gataccatga 1980
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aactcgac 2048

```

<210> 261

<211> 1282

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1244)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1261)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1265)

<223> n equals a,t,g, or c

<400> 261

```

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tagtgccagc tacggtccgc ggctgggggtt ccctcctccg tttctgtatc cccacgagat 120
cctatagcaa tggaactcag cgatgcaaat ctgcaaacac taacagaata tttaaagaaa 180
aacttgatc ctgatccctgc catccgacgt ccagctgaga aatttcttga atctgttgaa 240
ggaaatcaga attatccact gttgcttttg acattactgg agaagtccca ggataatggt 300
atcaaagtat gtgcttcagt aacattcaaa aactatatta aaaggaactg gagaattggt 360
gaagatgaac caaacaataa ttgtgaagcc gatcgagtgg ccattaaagc caacatagtg 420
cacttgatgc ttagcagccc agagcaaatc cagaagcagt taagtgatgc aattagcatt 480
attggcagag aagattttcc acagaaatgg cctgacttgc tgacagaaat ggtgaatcgc 540

```

```

tttcagagtg gagatttcca tgttattaat ggagtcctcc gtacagcaca ttcattatTT 600
aaaagatacc gtcatagaatt taagtcaaac gagttatgga ctgaaattaa gcttggtctg 660
gatgcctttg ctttgccttt gactaatctt ttttaaggcca ctattgaact ctgcagtacc 720
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gaagaggaag ccggcttatt ggagctctta aaatcccaga tttgtgataa tgccgcactc 960
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tggaatttta ctagttaaca cgggtcaaga ggtaaatat gatttgttgg taagtaatgc 1080
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gaacacgctg acaagtatct gtggaaaagg ttattgtgcc taacatggga tttagagctg 1200
ctgatggaag aagcattgaa gtaattctga ggggttacag agngagatt tggaagggtc 1260
nggtnttggT actagacgca gg                                     1282

```

<210> 262

<211> 599

<212> DNA

<213> Homo sapiens

<400> 262

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ggcacgagcc ccggcagagg cggargcgga gtcggcctga gaggtctctc gtcgctgcag 60
gcgcctcagc ccagccgcgt gccttgcccc atggccgcct actcttaccg ccccgccct 120
ggggccggcc ctgggcctgc tgcaggcgcg gcgctgccgg accagagctt cctgtggaac 180
gttttccaga gggtcgataa agacaggagt ggagtgatat cagacaccga gcttcagcaa 240
gctctctcca acggcacgtg gactcccttt aatccagtga ctgtcaggtc gatcatatcc 300
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tacatcacgg actggcagaa cgtcttccgc acgtacgacc gggacaactc cgggatgatc 420
gataagaacg agctgaagca ggccctctma gtttcggcta ccggctctct kaccagttcc 480
acgacatcct cattcgaaag kttgacaggc argggacggg gcaratcgsc ttcgacgast 540
taatccaagg ctggcatggc ctgcagaggt ttacggatat attcaaaggT ttcggcacg 599

```

<210> 263

<211> 1261

<212> DNA

<213> Homo sapiens

<400> 263

```

ggcacgaggt tgttcggagc gggcgagcgg agttagcagg gctttactgc agagcgcgcc 60
gggcactcca gcgaccgtgg ggatcagcgt aggtgagctg tggccttttg cgaggtgctg 120
cagccatagc tacgtgcgtt cgctacgagg attgagcgtc tccaccagcT aagtgggcaa 180
gaggcggcag gaagtgggta cgcaggggcg caaggcgcac agcctctaga cgactcgctt 240
tccctccggc caacctctga agccgcgtcc tactttgaca gctgcagggc cgcggcctgg 300
tcttctgtgc ttcaccatct acataatgaa tcccagtatg aagcagaaac aagaagaaat 360
caaagagaat ataaagaata gttctgtccc aagaagaact ctgaagatga ttcagccttc 420
tgcatctgga tctctgttg gaagagaaaa tgagctgtcc gcaggcttgt ccaaaggaa 480
acatcggaat gacccttaa catctacaac ttccagccct ggggttattg tcccagaatc 540
tagtgaaaaT aaaaatcttg gaggagtcac ccaggagtca tttgatctta tgattaaaga 600
aaatccatcc tctcagtatt ggaaggaggt ggcagaaaaa cggagaaagg cgctgtatga 660
agcacttaag gaaaatgaga aacttcataa agaaattgaa caaaaggaca atgaaattgc 720
ccgcctgaaa aaggagaata aagaactggc agaagtagca gaacatgtac agtatatggc 780
agagctaata gagagactga atggtgaacc tctggataat tttgaatcac tggataatca 840

```

```

ggaatttgat tctgaagaag aaactgttga ggattctcta gtggaagact cagaaattgg 900
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cagagtacat aactacataa tgccaactct ggaatcaaat ttccttgttt gaatcctggg 1080
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gttgaacatt gtgtataact tagaataatg aaatataagg agtatgtgta gaaaaaaaaa 1260
a 1261

```

<210> 264

<211> 1020

<212> DNA

<213> Homo sapiens

<400> 264

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tattccttcc tctttatctc acaatttttg tctccactaa gcaagaagta aactaacact 180
tcgtcactct aaagaaataa cttatgtaaa actcttagta accctgtttg tcttcaaatg 240
agtaaataga ccaaagtggg gggacaattt tctagtcttg tagagggaaa aacatctgag 300
tcaacatttt gaaatgcaga gggatttggt acatgacgac atggaaaagg gcacttttaa 360
acacagctta ctcttcctca agtacagaga gtatatagtg aatcaaaact aactacagcc 420
attcttttta aagcccaagg gatggagcaa aggtgtaagg atgttacctg tttgttttaa 480
tcagagagca aaaagaagtc acaatagttt gggagaaaaa gtagtatggg gagtaagggt 540
atgcgtataa tttcatactg aattttattac tatttgggat gtacgtcart gttctaacaa 600
acactgccaa cacgtcaatt ttttaaaaag cgtggggcac attgctaaga atttgttaaa 660
gcataactgt attttttggt ttagggcctt attgatgttt tgccgttcca atgtatgcat 720
ttttttactc aataaacttg tcttaatttt agaactgtct gatgatttcg tactggaaag 780
aactactcaa agacggcagt gtaaaagcaa gtcttaggaa agtcccattt tatttgtgtc 840
taacaaacat acaggaactg aaatattttt gttaaaccct gggatgcacc gaagtaactt 900
aaaacaaacc gttcaacagg ttcccccaac cgcccacgcc acataaagaa cagacatatc 960
tacacttgaa aaagtcata cctgtctcag ttctgaaagt cccttaagga ttgcttgctg 1020

```

<210> 265

<211> 571

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (557)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (565)

<223> n equals a,t,g, or c

<400> 265

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ctttacggca sgmgtccgcg tcgctagcta gtcgttctga agcggcggcc agagaagagt 60
caagggcacg agcatcgggc catgcctttc ttggacatcc agaaaagggt cggccttaac 120

```

221

```
atagatcgat ggttgacaat ccagagtggg gaacagccct acaagatggc tggtcgatgc 180
catgcttttg aaaaagaatg gatagaatgt gcacatggaa tcggttatac tcgggcagag 240
aaagagtgca agatagaata tgatgatttc gtagagtgtt tgcttcggca gaaaacgatg 300
agacgtgcag gtaccatcag gaagcagcgg gataagctga taaaggaagg aaagtacacc 360
cctccacctc accacattgg caaggggggag cctcgccct gaacagagca gctgctgatg 420
tctggaggct gattttcctg ttctctgttc tccactggaa aggttgttta cgacaaacct 480
ccttgatcaa gtgtgtaaaa ataaaggatt gctccatcct aaaaaaaaaa aaaaaaaaaa 540
aaaatttggg ggggggnccc cgtancccat t 571
```

<210> 266

<211> 1350

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (204)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1313)

<223> n equals a,t,g, or c

<400> 266

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tgccgccatc gtcgtggggc ttctggggca gctagggctg cccgccgcgc tgccctgcgcc 60
ggaccggggc ggggtccagtc ccggggcggc cgctcgcgga gagaaataac atctgctttg 120
ctgccgagct cagaggagac ccagacccc tcccgagcc agagggctgg agcctgctca 180
gaggtgcttt gaagatgccg gagncccgcc tctgctgttg gcagctgtgt tgctgggcct 240
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ggaggccatt gacacctact gcgagcagaa ggagtgggcc atgaacgtgg gcgacaagaa 480
aggcaagatc gtggacgccg tgattcagga gcaccagccc tccgtgctgc tggagctggg 540
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catcaccatc gagatcaacc ccgactgtgc cgccatcacc cagcggatgg tggatttcgc 660
tggcrtgaag gacaagggtca cccttggtgg tggagcgtcc caggacatca tccccagct 720
gaagaagaag tatgatgtgg acacactgga catggtcttc ctcgaccact ggaaggaccg 780
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aatataaaat agaaattaag aatctaaawa aaawaaaaaa acgggggggcg ctntaaaggg 1320
tccaagctta acgtaagcgt gcatgggaag 1350
```

<210> 267

<211> 1319

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (7)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (61)

<223> n equals a,t,g, or c

<400> 267

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gcaaganaga aattaaccct cactaaaggg aacaaaagct ggagctccac cgcggtggcg 60
nccgctctag aactagtgga tcccccgggc tgcaggaatt cggcacgaga gactccgcga 120
cctactgacc cggcgactga caggctccaa ctaccggga ctcagtatta gccttcgcct 180
cactggctcc tctgcacaag aggmggcttc cggagtagcc ctcggtgaag cccagacca 240
cagctatgag tcccttcgtg tgacgtctgc gcagaaacat gttctgcatg tccagctcaa 300
ccggcccaac aagaggaatg ccatgaacaa ggtcttctgg agagagatgg tagagtgctt 360
caacaagatt tcgagagacg ctgactgtcg ggcggtgggtg atctctgggtg caggaaaaat 420
gttcaactgca ggtattgacc tgatggacat ggcttcggac atcctgcagc ccaaaggaga 480
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caacgtcatc gagaggtgcc ccaagcccggt gattgctgcc gtccatgggg gctgcattgg 600
cggaggtgtg gaccttgtca ccgcctgtga catccggtag tgtgcccagg atgctttctt 660
ccaggtgaag gaggtggacg tgggtttggc tgccgatgta ggaacactgc agcgctgcc 720
caaggtcatc ggaaccaga gcctggtcaa cgagctggcc ttcaccgccc gcaagatgat 780
ggctgacgag gccctgggca gtgggctggg cagccgggtg tcccagaca aagaggtcat 840
gctggatgct gccttagcgc tggcggccga gatttccagc aagagccccg tggcgtgcag 900
agcaccaagg tcaacctgct gtattcccgc gaccattcgg tggccgagag cctcaactac 960
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cccaggcccc agccaggggg ccggccttgt cccgcctcat ccacagaaag ggaggatggg 1140
cgatgacagt tgtttctatg cttctgacc cagtttccca gtttataact ttatgacaat 1200
gagtttctca agcccaaggc cttatcttca cccacaaac aataaaagcaa agtaaaagaaa 1260
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaagg ggggggggc 1319
```

<210> 268

<211> 3694

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (746)

<223> n equals a,t,g, or c

<400> 268

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cggagctgcg ccctgggtgtg caagcactgg taccgctgcc tgcacggcga tgagaacagc 60
gaggtgtggc ggagcctgtg cgcccgagc ctggcagaag aggctctgcy cacggacatc 120
ctgtgcaacc tgcccagcta caaggccaag atacgtgctt ttcaacatgc cttcagcact 180
```

```

aatgactgct ccaggaatgt ctacattaag aagaatggct ttactttaca tcgaaacccc 240
attgctcaga gcactgatgg tgcaaggacc aagattgggt tcagtgaggg ccgccatgca 300
tggaagtgt ggtgggaggg ccctctgggc actgtggcag tgattggaat tgccacaaaa 360
cgggccccca tgcagtgcc aagttatgtg gcattgctgg gcagtgatga ccagagctgg 420
ggctggaatc tgggtggacaa taatctacta cataatggag aagtcaatgg cagttttcca 480
cagtgaaca acgcaccaa atacagata ggagaaagaa ttcgagtcac cttggacatg 540
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ttgtaaaatt caccttgagt tttctcatct gcaaaataga aaaaaaaaaat ccttgctccc 3300
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ggaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 3694

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<210> 269

<211> 1242

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (4)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (31)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (46)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (460)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1233)

<223> n equals a,t,g, or c

<400> 269

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ctagtggatc ccccgggctg caggaattcg gcaccgcaaa aaaatttaaa aaatacagtg 120
ttttgtattg atatatgtac tgtgtgtgtc tgtgtgtgtg agatcaagat caggttttga 180
ttggtgatgt actattactg ttgtccttgg tcagggaacac agaggatgtt tggggtttgg 240
tggtgagaca ttatctaaca cgtgctgtgt cctttttggg tttagagccc acaccagtga 300
gaagcatcag caccgtgaac ttgtctgaga atagcagtgt tgtcatcccc ccaccgcact 360
acttgaatg cttatccatg ggggcagytg ccgacaggag agcagattcg gccaggacga 420
catccacctt taaggcccca gcgtccaage ccgagaccgn ggctcctaac gatgccaacg 480
ggactgcaaa gccgcctttt ctgagcggag aaaaccctt tgccactgtg aaactccgcc 540
cgactgtgac gaatgatcgc tcggcaccca tcattcgatg agaggacagc caaggactct 600
cccgggcctc tccggttctc ccttgcgga tgatgggcgc atcctgtctg ccacgtgctg 660

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acggtcggga agcttcagtg gagaggccta actctaattgt cgcttgctta agcaaatcat 720
gcttctctgt ttcacgtagt tgggttgaca agtttctgcc tttaagataa atgagtaata 780
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ataagggata gtctatgctt tcaggactgg ctttctgcac ctgatatgaa tgagaccagt 960
tttattttat aaagcatgtg ctcttaatag cattatgtct aaagaagata tcacgtaagt 1020
ttgcatctta gcatgcaaat cataatttta agcaatataa attatgaaaa tactatataa 1080
atgtaattta acttaaaatg ttttaagtgt gagcttccag agrtgggagg aaacccccac 1140
cctccctcca accacgccag agsctgtagg agtgctaagg acgstttgcc tggcccttta 1200
tcacagccac acgtaggcac ytcgacggga atnctccctt cc 1242

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<210> 270

<211> 2057

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (22)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2053)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2054)

<223> n equals a,t,g, or c

<400> 270

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cggagcggtt tgtaattgtat tnctggattt tattttgctg tattagctcc tcaagagtta 60
ctgatctatg aaatggcaga gaatggaaaa aattgtgacc agagacgtgt agcaatgaac 120
aaggaaacatc ataattgaaa tttcacagac ccctcttcag tgaatgaaaa gaagaggagg 180
gagcgggaag aaaggcagaa tattgtcctg tggagacagc cgctcattac cttgcagtat 240
tttctctctg aaatccttgt aatcttgaag gaatggayct caaaattatg gcatcgtaa 300
agcattgtgg tgtctttttt actgctgctt gctgtgctta tagctacgta ttatggtgaa 360
ggagtgcac aacagtatgt gcaacgtata gagaaacagt ttcttttgta tgcctactgg 420
ataggcttag gaattttgtc ttctgttggg cttggaacag ggctgcacac ctttctgctt 480
tatctgggtc cacatatagc ctcagttaca ttagctgctt atgaatgcaa ttcagttaat 540
tttcccgaac caccctatcc tgatcagatt attgtccag atgaagaggg cactgaagga 600
accatttctt tgtggagtat catctcaaaa gttaggattg aagcctgcat gtgggggtatc 660
ggtacagcaa tcggagagct gcctccatat ttcattggyca gagcagctcg cctctcaggt 720
gctgaaccag atgatgaaga gtatcaggaa tttgaagaga tgctggaaca tgcagagtct 780
gcacaagact ttgcctcccg ggccaaactg gcagttcaaa aactagtaca gaaagttgga 840
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acgtgtggac actttctggt accttttttg accttctttg gtgcaaccct aattggaaaa 960
gcaataataa aaatgcatat ccagaaaatt tttgttataa taacattcag caagcacata 1020
gtggagcaaa tgggtggctt cattggtgct gtccccggca taggtccatc tctgcagaag 1080
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```

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acaccacagg gagaaaactg gttgtcctgg atgtttgaaa agttggtcgt tgtcatgggtg 1200
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cagcgggttga actcagagga gaaaactaaa taagtagaga aagttttaaa ctgcagaaat 1320
tggagtggtat gggttctgcc ttaaatggg aggactccaa gccgggaagg aaaattccct 1380
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cactgacata ctttttcctt ctgtgctaag gtaaggatc caccctcgat gcaatccacc 1500
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agttcctaag tatgttaa atgtcaagct ttttaggctt gtcacaaatg attgctttgt 1680
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ggccatttta tgatgcattg cacaccctct ggggaaattg atctttaaat tttgagacag 1860
tataaggaaa atctggttgg tgtcttacia gtgagctgac accatttttt attctgtgta 1920
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aaaaaaaaaa aannaaa 2057

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<210> 271

<211> 960

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (4)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (31)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (951)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (956)

<223> n equals a,t,g, or c

<400> 271

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ccgctctaga actagtggat cccccgggct gcaggaattc ggcacgagct cttccacccc 120
tgccaggccc agcagccacc acagcgctg cttcctcggc cctgaaatca tgcccctagg 180
tctcctgtgg ctgggcctag ccctgttggg ggctctgcat gccaggccc aggactccac 240
ctcagacctg atcccagccc caccctctgag caaggctcct ctgcagcaga acttccagga 300
caaccaattc caggggaagt ggtatgtggt aggcctggca gggaatgcaa ttctcagaga 360
agacaaagac ccgcaaaaga tgtatgccac catctatgag ctgaaagaag acaagagcta 420
caatgtcacc tccgtcctgt ttaggaaaaa gaagtgtgac tactggatca ggacttttgt 480

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gagttacctc gtccgagtggt tgagcaccaa ctacaaccag catgctatgg tgttcttcaa 600
gaaagtttct caaaacaggg agtacttcaa gatcacctc tacgggagaa ccaaggagct 660
gacttcggaa ctaaaggaga acttcatccg cttctccaaa tctctgggcc tccctgaaaa 720
ccacatcgtc ttccctgtcc caatcgacca gtgtatcgac ggctgagtgc acaggtgccg 780
ccagctgccg caccagcccc aacaccattg agggagctgg gagaccctcc ccacagtgcc 840
acccatgcag ctgtccccc ggccaccccc ctgatggagc cccacctgt ctgctaaata 900
aacatgtgcc ctcaggaaaa aaaaaaaaaa aaaaaaaaaa aagggggggg ncccgntccc 960
```

<210> 272

<211> 1167

<212> DNA

<213> Homo sapiens

<400> 272

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cggcggcggg aaatcggctg tgggagagag gctaggcctc tgaggagcg aatccggcgg 120
gtatcagagc catcagaacc gccaccatga cggtagggca gagcagcaag atgctgcagc 180
atattgatta caggatgagg tgcacctgc aggacggccg gatcttcatt ggcaccttca 240
aggcttttga caagcacatg aatttgatcc tctgtgactg tgatgagttc agaaagatca 300
agccaaagaa ctccaaacaa gcagaaaggg aagagaagcg agtcctcggc ctggtgctgc 360
tgcgagggga gaatctggtc tcaatgacag tagagggacc tcctcccaaa gatactggta 420
ttgctcgagt tccacttgct ggagctgccg ggggccagg gatcggcagg gctgctggca 480
gaggaatccc agctgggggt cccatgcccc aggtcctgc aggacttgct gggccagtcc 540
gtgggggttg cgggccatcc caacaggtga tgacccaca aggaagaggt actgttgagc 600
ccgctgcagc tgctgccaca gccagtattg ccggggctcc aaccagtag ccacctggcc 660
gtgggggtcc tccccacct atgggccgag gagaccccc tccaggcatg atggggccac 720
ctcctggtat gagacctcct atgggtcccc caatggggat cccccctgga agagggactc 780
caatgggcat gccccctccg ggaatgcggc ctcctcccc tgggatgcga ggccttcttt 840
gaccttggtc cacagagtat ggaagtagct ccgagaggg gtgggctcga ttcctcaggg 900
ccacgttacc acagacctgt ttgtttctta tgctgttggt cgtggagtct catgggattg 960
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tcttgccct cctcagctcc ctgcctgttt cccgtaaggc tgtacatagt ccttttatct 1080
ccttggtggc tatgaaactg gtttataata aactcttaag agaacattaa aaaaaaaaaa 1140
aaaaactyrr gggggggccc ggtccca 1167
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<210> 273

<211> 2771

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (16)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (27)

<223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (42)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (64)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (2715)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (2717)
 <223> n equals a,t,g, or c

<400> 273

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tggncccccc gggctgcagg aattcggcac gagccsaccc gcctcttggc tcctctcctc 120
taggccgtcg ctttcgggtt ctctcatcgc ttcgctcggtc gccaatgttt gaggagaagg 180
ccagcagtc ttcagggaag atgggaggcg aggagaagcc gattgggtgct ggtgaagaga 240
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agttgaatcc ttggcctgaa tatatttaca cacgtcttga gatgtataat atactaaaag 360
cagaacatga ttccattctg gcagaaaagg cagaaaaaga tagcaagcca attaaagtca 420
ctttgcctga tggtaaacag gttgatgcgg aatcttggaa aactacacca tatcaaattg 480
cctgtggaat tagtcaaggc ctggccgaca acaccgttat tgctaaagta aataatgttg 540
tgtgggacct ggaccgccct ctggaagaag attgtacctt ggagcttctc aagtttgagg 600
atgaggaagc tcaggcagtg tattggcact ctagtgctca cataatgggt gaagccatgg 660
aaagagtcta tgggtgatgt ttatgctacg gtccgccaat agaaaatgga ttctattatg 720
acatgtacct cgaagaaggg ggtgtgtcta gcaatgattt ctcttctctg gaggctttgt 780
gtaagaaaat cattaaagaa aaacaagctt ttgaaagact ggaagttaag aaagaaactt 840
tactggcaat gttaaagtac aacaagttca aatgccggat attgaatgaa aaggtgaata 900
ctccaactac cacagtctat agatgtggcc ctttgataga tctctgccgg ggtcctcatg 960
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aaggcaaagc agatatggag actctccaga gaatttatgg catttcattc ccagatccta 1080
aaatgttgaa agagtgggag aagttccaag aggaagctaa aaaccgagat cataggaaaa 1140
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tgccaaaagg agcctacatt tataatgcac ttattgaatt cattaggagc gaatatagga 1260
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tctgtgccat ggagcagatt gaagatgaaa taaaagggtt tttggatttt ctacgtacgg 1620
tatatagcgt atttggattt tcttttaaac taaacctttc tactcgcccg gaaaaattcc 1680
ttggagatat cgaagtatgg gatcaagctg agaaacaact tgaaaacagt ctgaatgaat 1740
ttggtgaaaa gtgggagtta aactctggag atggagcttt ctatggccca aagattgaca 1800

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cagtgtattgt tcatcgagcc atcttgggat cagtggaaag aatgattgct atcctcacag 1980
aaaactatgg gggcaaattg cccttttggc tgtcccctcg ccaggtaatg gtagttccag 2040
tgggaccaac ctgtgatgaa tatgcccata aggtacgaca acaattccac gatgccaat 2100
tcatggcaga cattgatctg gatccaggct gtacattgaa taaaaagatt cgaaatgcac 2160
agtttagcaca gtataacttc atttttagttg ttggtgaaaa agagaaaatc agtggcactg 2220
ttaatatccg cacaagagac aataagggtcc acggggaacg caccatttct gaaactatcg 2280
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tgaaaaagtt ttcaaattca attaaagataa ctagaattgg attatggtgt aaaaaataaa 2700
aaaaaattta ttcananaaa aaaaaaaaaa aaaaaaaagc tacctcggcc gcgaccacgc 2760
taagccgaat t 2771

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<210> 274

<211> 1889

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (15)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (57)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (87)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (113)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1676)

<223> n equals a,t,g, or c

<400> 274

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cacgacgtcc gcggnacggt gggacggaac gcgtgggagg acgcgtgggc ggacgcntgg 60
gttcggaaac ctatcgatta cacagtnctg gatgatgtgg gccatggtgt cangcatgga 120

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aatagaccag cctgcaggaa ctggcacact gtcgagaaca aatcctccta ctcagaaacc 180
gccaaagtcct cccatgtcag gccggggaac actgggacgg aatactcctt ataaaaccct 240
ggaacctgtt aaaccccaa cagttcctaa tgactatatg accagtcctg ctaggcttgg 300
aagtcagcat agtcaggca ggacagcatc tttaaatacag agaccaagga cacacagtgg 360
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tgctgtgcct acaccttcgc caccactat tggaccagca gcccgggct cagctcctgg 480
ttcccagtat ggacaaatga ccaggcagat atctcgacac aactctacta cttcttcgac 540
atcttctggt ggatacagac gaactccctc tgtgactgct caattttctg ctcagcctca 600
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agttcagtat aatgatccat atgcagatgg ggatcctgct tgggccccca agaattatat 900
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agattctctc atttaaaaaa aatactgttt gtttaaagca tgcataaaaa tttatgtatt 1560
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cattataaac tttttccatt cataaataca taagtgaacc aaagggtttt gtctcttcct 1800
tcactgattt gctttaaaaa aaataaaaga taatgattta ttgcagaaaa aaaaaaaaaa 1860
aaaaaaaaaa aaaaaataaa aaaaaataaa 1889

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<210> 275

<211> 604

<212> DNA

<213> Homo sapiens

<400> 275

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ttttccgggc cacctgggtc ctcagccagt gcctttgaaa catttctgcc tgtaatgtca 60
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tcctgccatc ctctcaacag ctctgtgggg tgggtcctcc ccataacctg atgcaccgac 180
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cctggggctg ccacgtgttt aggaaacaaa gtatgcgcta ctgtctgaaa acaaaataaag 540
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aaag 604

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<210> 276

<211> 1381

<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (1348)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1349)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1350)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1358)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1359)
<223> n equals a,t,g, or c

<400> 276
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tcaagcttgg aatccacgaa gactccacta accgccgccg cctgtctgag ctgctgcgct 240
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aggagacaca gaagtccatc tattacatca ctggtgagag caaagagcag gtggccaact 360
cagcttttgt ggagcgagtg cggaaacggg gcttcgaggt ggtatatatg accgagccca 420
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gctggacagc caatatggag cggatcatga aagcccaggc acttcgggac aactccacca 720
tgggctatat gatggccaaa aagcacctgg agatcaaccc tgaccacccc attgtggaga 780
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gggtgtcaag ccccatcccc tctctactct tgacagcagg attggatgtt gtgtattgtg 1260
gtttatttta ttttcttcat tttgttctga aattaaagta tgcaaaaataa agaatatgcc 1320

gttttttatac aaaaaaaaaa aaaaaaannn ggggggggng ccccggtccc matttcccc 1380
c 1381

<210> 277
<211> 1149
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (680)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1088)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1098)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1140)
<223> n equals a,t,g, or c

<400> 277
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<210> 278

<211> 811

<212> DNA

<213> Homo sapiens

<400> 278

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<210> 279

<211> 1260

<212> DNA

<213> Homo sapiens

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<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1252)

<223> n equals a,t,g, or c

<400> 279

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<210> 280

<211> 1668

<212> DNA

<213> Homo sapiens

<400> 280

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agtgcctttg ttagatggaa aaaaaaaaaa aaaaaaaaaa aaaaaaaa 1668

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<210> 281

<211> 2328

<212> DNA

<213> Homo sapiens

<400> 281

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gaagcatata aactccgtgc agccagatta gtagaaattg ctgcaaaaaa ccttcaaaaa 180

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gaagtgattc acagaaaaag caaggaggta gcttggaaacc taacttctgt tgaccttggt 240
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<210> 282

<211> 956

<212> DNA

<213> Homo sapiens

<400> 282

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<210> 283

<211> 1402

<212> DNA

<213> Homo sapiens

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<222> (26)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (88)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (97)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (131)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1344)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1355)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1394)

<223> n equals a,t,g, or c

<400> 283

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<210> 284

<211> 675

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (20)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (520)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (560)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (618)

<223> n equals a,t,g, or c

<400> 284

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<210> 285

<211> 1339

<212> DNA

<213> Homo sapiens

<220>

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<222> (1330)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1331)

<223> n equals a,t,g, or c

<400> 285

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aaaaaaaaan naaaaaaaaa 1339

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<210> 286
<211> 1398
<212> DNA
<213> Homo sapiens

<400> 286
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<212> DNA
<213> Homo sapiens

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<223> n equals a,t,g, or c

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<210> 288

<211> 3094

<212> DNA

<213> Homo sapiens

<400> 288

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<210> 289

<211> 1983

<212> DNA

<213> Homo sapiens

<400> 289

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<210> 290

<211> 1298

<212> DNA

<213> Homo sapiens

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<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1231)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1242)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1262)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1285)

<223> n equals a,t,g, or c

<400> 290

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<210> 291

<211> 2459

<212> DNA

<213> Homo sapiens

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<221> misc feature

<222> (3)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (4)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1604)

<223> n equals a,t,g, or c

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<221> misc feature

<222> (1605)

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<221> misc feature
<222> (2374)
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<221> misc feature
<222> (2392)
<223> n equals a,t,g, or c

<400> 291

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<210> 292
 <211> 570
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc feature
 <222> (567)
 <223> n equals a,t,g, or c

<400> 292
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<210> 293
 <211> 2468
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc feature
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 <223> n equals a,t,g, or c

<400> 293
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<210> 294

<211> 1080

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1038)

<223> n equals a,t,g, or c

<400> 294

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caggccagca gacagtgggt tttgctggac acagtgggga tgtgatgtcc ctgtccctgg 180
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tttttccata aaggagccaa ttccaactct gwaaaaaaaa aaaaaaaaaa acttcgrggg 1020
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<210> 295

<211> 2695

<212> DNA

<213> Homo sapiens

<400> 295

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tccatatata cagaaattag acaaataata agtcttttagt tcaacttaag catatctcaa 180
atgacttctc taaattttaa gttgatcatg ataggatcat aaaagacaga aaagacttaa 240
gtaatcttgt aatgacaatt atttccattt ttgctgaact aaaaatattt aacttcataa 300
atatgttact acagcttcca gatttaaaga aaaaaagttt cccccactct caattaaaag 360
ttagaaccct ccacttttaa aattatacaa atatttcttt tttacattac acagaagcct 420
tctgtaccat ttacgaatt tctgtcttca taataaagt gaaaatactg tcatttcaat 480
tttctgcttt aaattgtttt taataagcat yccaaagtga tacagactta agcttttaat 540
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<210> 296

<211> 1394

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1238)

<223> n equals a,t,g, or c

<400> 296

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gagagcattt tccgtgaagt ttgaggtcca ggctccacgc tggggcaacc cccgtgcgct 480
cagcttcgta ctgagttcgc tccagctcgg ggagggggtk gagttcgatg tgcctgcctgc 540
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acaccaaaaa aaaa 1394

<210> 297

<211> 998

<212> DNA

<213> Homo sapiens

<400> 297

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acattccttg tgacgactgc gcatgctcgg aaaggggacg caatcragat cccaaacgcg 180

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gtacagacca aaccgcagtc cacgttacgg atcggccttac tccgcggagt tggcctcatt 240
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aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaa 998

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<210> 298

<211> 1666

<212> DNA

<213> Homo sapiens

<400> 298

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<210> 299

<211> 2444

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (4)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (402)

<223> n equals a,t,g, or c

<400> 299

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251

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<210> 300

<211> 1026

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1026)

<223> n equals a,t,g, or c

<400> 300

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ggatacaaaa ctatttcagc aatgcagaca attaagtgtg ttgttggtgg cgatgggtgct 180
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<210> 301

<211> 830

<212> DNA

<213> Homo sapiens

<400> 301

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<210> 302

<211> 3300

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1158)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (3232)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (3280)

<223> n equals a,t,g, or c

<400> 302

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<210> 303

<211> 475

<212> DNA

<213> Homo sapiens

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<222> (444)

<223> n equals a,t,g, or c

<220>

<221> misc feature

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<221> misc feature

<222> (454)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (470)

<223> n equals a,t,g, or c

<400> 303

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aaaaaaaaat cctgtcttgt tcataaattg acaatgtcaa taaattgaaa tatggttcac 420
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<210> 304

<211> 2902

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (2888)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2891)

<223> n equals a,t,g, or c

<400> 304

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<210> 305

<211> 1553

<212> DNA

<213> Homo sapiens

<400> 305

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<210> 306

<211> 1987

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (731)

<223> n equals a,t,g, or c

<400> 306

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<210> 307

<211> 785

<212> DNA

<213> Homo sapiens

<400> 307

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aaaaa 785

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<210> 308

<211> 2178

<212> DNA

<213> Homo sapiens

<400> 308

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<210> 309

<211> 875

<212> DNA

<213> Homo sapiens

<400> 309

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<210> 310

<211> 756

<212> DNA

<213> Homo sapiens

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 <223> n equals a,t,g, or c

<220>
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 <222> (638)
 <223> n equals a,t,g, or c

<220>
 <221> misc feature
 <222> (684)
 <223> n equals a,t,g, or c

<220>
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 <222> (756)
 <223> n equals a,t,g, or c

<400> 310
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<210> 311
 <211> 851
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc feature
 <222> (834)
 <223> n equals a,t,g, or c

<400> 311
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gtttggaaat gaaagggaat taataagtca ccttcagtc catgagacaa cttgattatt 600
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ctcactaatc c

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<210> 312

<211> 1335

<212> DNA

<213> Homo sapiens

<400> 312

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cctcctcttc atcatcgctc tgcgtcgtcc cctcctcctc tggctccagt tctagtact 180
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<210> 313

<211> 516

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (505)

<223> n equals a,t,g, or c

<400> 313

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ctgagggagg cgcgagggcg cggagttcca ggtcgagcag ttaggccgcg agcgactgcg 120
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<210> 314

<211> 1833

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (625)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1761)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1766)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1792)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1806)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1827)

<223> n equals a,t,g, or c

<400> 314

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ctacgagtct cagagcacag ataccagaa cttctcctcc gagtccaagc gggagacaga 360

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<210> 315

<211> 1354

<212> DNA

<213> Homo sapiens

<400> 315

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gtacatatgt agatattggt ttctgtaaat aacctatttt tttctctatt ctctgcaatt 1140

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aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaa			1354

<210> 316

<211> 2421

<212> DNA

<213> Homo sapiens

<400> 316

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tataaagtga	gagaaattat	tcagaaactc	atgctggatg	gtgacaggaa	taaagatggg	300
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2421

<210> 317

<211> 1092

<212> DNA

<213> Homo sapiens

<400> 317

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<210> 318

<211> 1380

<212> DNA

<213> Homo sapiens

<400> 318

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taaaaccttg tatcagaaat ttatcatgtt tactgtttta aatgattgta tttataaaat 1260
tgtcaatatc ttaatgtatt taatgtagaa tattgctttt taaaataatg tttttatttt 1320
gctgtagaaa aataaaaaaa aatttgatta taaaaaaa aaaaaaaaaa aaaaaaaaaa 1380

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<210> 319

<211> 2612

<212> DNA

<213> Homo sapiens

<400> 319

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cacgcgtccg ccccatctga ggcgtttgtt gcagctacct gcacttctag attcatcttc 60
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ccataccact atatccatgt gctggaccag aacagcaacg tgtcccgtgt ggaggctcggg 180
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```

<210> 320

<211> 943

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (52)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (54)

<223> n equals a,t,g, or c

<400> 320

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taaagttggt ctctgaagag caaatgtctc attccagtaa tgaccactc agcaggaata 120
tggtggaggt cagtcgaatt caggtcagcc atatccaaaa gaccacaagt cattactaag 180
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gacttgaatt cttctcttgg gaccaagtta ataaaagacc aagaaactcc tgattaaact 360
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gcaaattgtg caatggaata aaatccacac tttagattct tgcaactgta tcatatgtaa 660
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tcagcccccac cagctgctg ggggaatgtg atgttctagc tctgagatgt taactgrgaa 840
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```

<210> 321

<211> 2959

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (2948)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2956)

<223> n equals a,t,g, or c

<400> 321

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tgctggtggt ttccacagat gccgggtttc actttgctgg agatgggaaa cttggtggca 180
ttgttttacc aaatgatgga caatgtcacc tggaaaataa tatgtacaca atgagccatt 240
attatgatta tccttctatt gctcaccttg tccagaaact gagtgaaaat aatattcaga 300
caatttttgc agttactgaa gaatttcagc ctgtttacaa ggagctgaaa aacttgatcc 360
ctaagtcagc agtaggaaca ttatctgcma attctagcaa tgtaattcag ttgatcattg 420
atgcatacaa ttccctttcc tcagaagtca ttttgaaaaa cggcaaattg tcagaaggmg 480
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gaggaaanaa aaaaanaaa 2959

```

<210> 322

<211> 802

<212> DNA

<213> Homo sapiens

<400> 322

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ggcacagctg gaggcgcggg agggcagcga gaggttcgcg ggtgcagcgc acaggagacc 60
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gtggtgctcg gcgacggcgt gcagctcccc cccggggact acagcacgac ccccggcggc 180
acgctcttca gcaccacccc gggaggtacc aggatcatct atgaccggaa attcctgatg 240
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accagccatc gtgtggagca ctaccaaggg gccctcagg gccttcctgg gaggagtccc 480
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ccagcccttt ctccctcact cagggcacct gcccctcct ctctgtgaac accagcagat 600
acctccttgt gcctccactg atgcaggagc tgccacccca aggggagtga cccctgccag 660
cacaccctcg cwgcyygggg sgcaaccacc ccttccttag gttgatgtgc ttgggaaagc 720
tccttcccc tccttcccc aagagaggaaa taaaagccmc cttcgcccta gggccaaraa 780
aaaaaaaaa aaaaaaaaaa aa 802

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<210> 323

<211> 1724

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1590)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1650)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1701)

<223> n equals a,t,g, or c

<400> 323

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gctccgctct ccccgctcca agcgccgcat tgggcaccgc ccaccagcat ggacgctcgc 120
cgcgctgccg agaaaagatct cagagtaaa aagaacttaa agaaattcag atatgtgaag 180
ttgatttcca tggaaacctc gtcctcctct gatgacagtt gtgacagctt tgcttctgat 240

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aattttgcaa acacgaggct gcagtcagtt cgggaaggct gtaggaccg cagccagtgc 300
aggcactctg gacctctcag ggtggcgatg aagtttccag cgcggagtac caggggagca 360
accaacaaaa aagcagagtc ccgccagccc tcagagaatt ctgtgactga ttccaactcc 420
gattcagaag atgaaagtgg aatgaatttt ttggagaaaa gggttttaa tataaagcaa 480
aacaaagcaa tgcttgcaaa actcatgtct gaattagaaa gcttccctgg ctcggtccgt 540
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gaatttcaga gaagagccta aatagcaaan tttacacaaa aacgagtatg atttagcact 1680
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```

<210> 324

<211> 2261

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1098)

<223> n equals a,t,g, or c

<400> 324

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gaatgcgttg aggaagcata aagacttggt gggtaaaaga tacattgaac tcttcaggag 120
cacagcagct gaagttcagc aggtgctgaa tcgattctcc tcggcccctc tcattccact 180
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```



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```

<210> 325

<211> 1213

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1213)

<223> n equals a,t,g, or c

<400> 325

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ccactcatte atcgacctcc ccaccccatc caacatctcc gcatgatgaa acttcggtc 120
actccttggc gcctgcctga tcctccaaat caccacagga ctattcctag ccatgcacta 180
ctcaccagac gcctcaaccg ccttttcctc aatcgccac atcactcgag acgtaaatta 240
tggtgaatc atccgctacc ttcacgcaa tggcgctca atattcttta tctgcctctt 300
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ttatacccta gccaacccct taaacacccc cccccacatc aagcccgaat gatatttctt 840
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actatccatc ctcatcctag caataatccc catcctccat atatccaaac aacaaagcat 960
aatatttcgc ccactaagcc aatcacttta ttgactccta gccgcagacc tcctcattct 1020
aacctgaatc ggaggacaac cagtaagcta cccttttacc atcattggac aagtagcatc 1080
cgtactatac ttcacaacaa tcctaatacct aataccaact atctccctaa tkgaaaacaa 1140
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<210> 326

<211> 2764

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (372)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2128)

<223> n equals a,t,g, or c

<400> 326

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gggacaagaa tgccctccta cagctgctgc aaaaggagaa ggagaagctg actgtgctgg 180
aaaggagata ccactcactc acagggggca ggcctttccc gaagaccaca tcgaccctca 240
aagaggttta ccgctccaag atggatggcg aggccaccag ccccttccc cggaccgcga 300
gcgcccccctc cctcctcctc ctggctcttc ctccctcctc tcccagctca gcgtggctac 360
cctggggcgt ancycckccc caaagagcgc tctactcacc cagaatggca cgggcagcct 420
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gcagaaggga caacaagtga ttgaagagca gcggcggcga ctggctgagc tgaagcagaa 540
agcggcagtg aggcacagtg ccagtgggat gcccttcacg gggcagcacc cttcccagcg 600
ggccccctcgg gcttcccccc tctcatgcac cactctatcc tacaccacct gcctgcgggg 660
cgggagcgtg gggaggaggg tgagcacgcc tatgatacgc tgagtctgga gagctctgac 720
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ttaggtcctg ccccaggccc agccagggct gaggagctgt cacagagagg gcctcagctc 1740
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ccaggctggg ggttttcagt atttgtaagc atttcagcag aacaataaag cttttggact 2700
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gggc

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<210> 327

<211> 1764

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1398)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1758)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1759)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1762)

<223> n equals a,t,g, or c

<400> 327

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acgaccccaa cgccctgtat tgcatttgcc gccagcctca caacaacagg tttatgattt 120
gctgtgaccg ctgtgaagaa tggtttcatg gcgatttgtt gggcatttct gaggctcgag 180
ggaggtcttt ggaaaggaat ggggaagact atatctgccc aaactgcacc attctgcaag 240
tgcaggatga gactcattca gaaacggcag atcagcagga agctaaatgg agacctggag 300

```

```

atgctgatgg caccgattgt acaagtatag gaacaataga gcagaagtct agcgaagacc 360
aagggataaa gggtagaatt gagaaaagctg caaatccaag tggcaagaag aaactcaaga 420
tcttccagcc tgtgatagag gcgcctgggtg cctcaaaatg tattggcccc ggggtgctgtc 480
acgtggcgca cccgactcgg tgtactgcag taatgactgt atcctcaaac acgccgcagc 540
gacaatgaag tttctaagct caggtaaaga acagaagcca aagcctaaag aaaagatgaa 600
gatgaagcca gagaagccca gtcttccgaa atgcgggtgct caggcaggta ttaaaatctc 660
ttctgtgcac aagagaccag ctccagaaaa aaaagagacc acagtgaaga aggcagtggg 720
ggccccctgc cggagtgaag cactcgggaa ggaagcagct tgtgagagca gcacgccgtc 780
gtgggcgagc gatcacaatt acaatgcagt aaagccagaa aagactgctg ctccctcgcc 840
gtcactgttg tataaatgta tgtatcacct aggggttggc ctccctggacc cctcccgttc 900
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atttcaaatt aatgaaatga agatatttca aacagatctt tgaaacctca gattctgtgg 1680
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ctttaaaaaa aaaaaaannt cnaa 1764

```

<210> 328

<211> 571

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (7)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (535)

<223> n equals a,t,g, or c

<400> 328

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gcccantac tttccagccc agtaaggggt atttcaggag agcagtccac tkaaggttct 60
ttccctttaa gatatgtgca ggatcaagtt gcggcacctt ttcagctgag taaccacact 120
ggccgcatca aggtgggtctt tactccgagc atctgtaaag tgacctgcac caagggcagc 180
tgtcagaaca gctgtgagaa ggggaacacc accactctca ttagtgagaa tggatcatgt 240
gccgacaccc tgacggccac gaacttccga gtggtaattt gccatcttcc atgtatgaat 300
gggtggcagc gcagttcaag ggacaaatgt cagtgccttc caaatttcac aggaaaaact 360
tgtcagatcc cagtccatgg tgccagcgtg cstaaacttt atcagcattc ccagcagcca 420
ggcaaggcat tggggacgca tgtcatccat tcaacacata ccttgcctct gaccgtgact 480
agccagcagg agtcaaagtg aaatttcctc cttaacatag tcaatatcca tgtgnaacat 540

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cctcctgaag cttccgtcca gatacatcag g

571

<210> 329

<211> 473

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (37)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (449)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (467)

<223> n equals a,t,g, or c

<400> 329

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agttccagac	cacattattg	ataagatgtg	ttaaaataaa	taagatcttt	ctgtgaactt	120
ttgggaacca	aatggttttg	ggcatgattt	cccagctcat	tatatattga	cacagaattt	180
tttcagaatg	gcatttacta	gtaccccaga	aatttagcaa	agtatagtta	ggtacttatt	240
gtaaaatata	ttgcatattt	gatttaaggt	ttgttatgaa	cacactaatc	tgatatttta	300
tatttaaacc	atthttcaatk	ctgtaagact	cagtaagagc	tatttaatta	tactgwaaca	360
aagaaaatct	ataaataaat	agcacaaata	ggcacatgcg	ggtgtataat	actgaagtgg	420
tagtttttaa	ttccgaaga	gaataagcnt	ttcaggccca	ttagaancac	aga	473

<210> 330

<211> 1335

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (865)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1004)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1156)

<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1301)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1328)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1333)
<223> n equals a,t,g, or c

<400> 330
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gacatggagc agccctgctg ctgaggccgc gccctccccg ccctgaggtg ggggcccacc 120
aggatgagca agctgccag ggagctgacc cgagacttgg agcgcagctg cctgccgtgg 180
cctccctggg ctccctactg tcccacagcc agagcctctc ctgcacctc cttccgccgc 240
ctgagaagcg aagggccatc tctgatgtcc gccgcacctt ctgtctcttc gtcaccttcg 300
acctgctctt catctccctg ctctggatca tcgaactgaa taccaacaca ggcatccgta 360
agaacttgga gcaggagatc atccagtaca aotttaaaac ttccttcttc gacatctttg 420
tcctggcctt cttccgcttc tctggaactgc tcctaggcta tgcgtgctgc rgctccggca 480
ctggtgggtg attgcggtca cgacgctggg gtccagtga ttcctcattg tcaaggatcat 540
cctctctgag ctgctcagca aaggggcatt tggctacctg ctccccatcg tctcttttgt 600
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tcagatgaag aagttgctgg gaagaaaagt ttctctgctc aggagcgga gtacatccgc 840
caggggaagg aggccacggc agtgntggac cagatcttgg ccaggaaga gaactggaag 900
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aagacgttta tcctgaagac ctccctgccc tgctctgcgg astncgtgta ccaggaggtg 1020
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cagcgagtgg aagacaacac cctcatctcc tatgacgtgt ctgcaagggg ctgcggggcg 1140
cgtkgtcttc cccaanggac ttcgtgaatg tccggcgcat tgarcggcgc agggaccgat 1200
acttgttcat cagggatcgc caccttcaca cagtgccaa ccccgacgc acaaatatgt 1260
tccggggaga gaatggcctg ggggtttcat cgtggttcaa ntcggccatt aacccctgt 1320
tttgacacntt gtntg 1335

<210> 331
<211> 1046
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (982)
<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (997)

<223> n equals a,t,g, or c

<400> 331

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attggcctgg agacatggtt ttttgtggtt gcagctgcag ctgtccccc gtcttttaac 120
tcgacatcaa aagcctctct cctgccagtg ccatagggtt gttagagcta ctgttttgta 180
acagctgtct aggtgtcccc aaactcctgg agttttccac cctgagctgt taaaaacctg 240
ccctgcctgt caccatttct tgtgccacca gcccaccccc tgccctccact ctccctccctg 300
ccaccttctg tccctgccat aggaatatgg ggacaccgtg tacaccattg aagttccctt 360
tcacggcaag acgtttatcc tgaagacctt cctgccctgt cctgcggagc tcgtgtacca 420
ggaggtgatc ctgcagcccc agaggatggt gctgtggaac aagacagtga ctgcctgcca 480
gatcctgcag cgagtggaa acaacacctt catctcctat gacgtgtctg caggggctgc 540
gggcggcgtg gtctcccaa gggacttctg gaatgtccgg cgcattgagc ggcgcagggg 600
ccgatacttg tcatcaggga tcgccacctt acacagtgcc aagccccga cgcacaaata 660
tgtccgggga gagaatggcc ctgggggctt catcgtgctc aagtcggcca gtaacccccg 720
tgtttgcacc tttgtctgga ttcttaatac agatctcaag ggccgcctgc cccggtacct 780
catccaccag agcctcgagg ccaccatgtt tgaatttgcc ttccacctgc gacascgcat 840
cagcgagctg ggggcccagg cgtgactgtg cccctcccca ccctgcgggc cagggctcctg 900
tcgccaccac ttccagagcc agaaaggtg ccagttgggc tcgcactgcc cacatgggac 960
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<210> 332

<211> 1311

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1280)

<223> n equals a,t,g, or c

<400> 332

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agcagcccag aaattttatg aataagcatc agaagccagt gctaacaggc cagcggttca 180
aaactcggaa aagggatgaa aaagagaaat tcgaaccac agtcttcagg gatacacttg 240
tccaggggct taatgaggct ggtgatgacc ttgaagctgt agccaaattt ctggactcta 300
caggctcaag attagattat cgtcgtctat cagacacact ctccgatatc ctgggtggctg 360
gcagtatgct tgcccctgga ggaacgcgca tagatgatgg tgacaagacc aagatgacca 420
accactgtgt gttttcagca aatgaagatc atgaaacat ccgaaactat gctcaggtct 480
tcaataaact catcaggaga tataagtatt tggagaaggc atttgaagat gaaatgaaaa 540
agcttctcct ctcccttaaa gccttttccg aaacagagca gacaaagttg gcgatgctgt 600
cggggattct gctgggcaat ggcacctgc ccgccaccat cctcaccagt ctcttcaccg 660
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ctgacgcagg tcttaaggag ctttccgact tcctccgagt ccagcagtc ctagggcacca 900
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ggaaggaact gcagaaggag ctccaggagc gtcttttctca ggaatgcccg atcaaggagg 960
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atttcatgaa agccttttcag aagattgtgc ttccttatac catttcagta ttgcttcttc 1260
gctcagaaca tcagctttan tcgtgccgat tcggcacgag cggcacgagc c 1311

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<210> 333

<211> 1444

<212> DNA

<213> Homo sapiens

<400> 333

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ggcagagccc ggcctcttgg tactgctgac cccagccagg ctacagggat cgattggagc 60
tgtccttggg gctgtaattg gccccagctg agcagggcaa acactgaggt caactacaag 120
ccacaggccc ctccccagc ctcaagttcac agctgccctg ttgcaggagg gcggtggccc 180
ttctgttgct agaccgagcc tgtgggatat accaaggcag aggagcccat agccatgagg 240
agcctcgggg ccctgctctt gctgctgagc gcctgcctgg cggtgagcgc tggccctgtg 300
ccaacgcgcg ccgacaacat ccaagtgcag gaaaacttca atatctctcg gatctatggg 360
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caggacttca gagtgggtgc ccagggtgtg ggcacccctg aggactccat cttcaccatg 780
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gaagtcacca agaaagaaga ttcctgccag ctgggctact cggccggtcc ctgcatggga 960
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tggccagtgt ctgtcccggt gtcctgtggc aggcagcgcc aagcaacctg ggtccaaata 1380
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aagg 1444

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<210> 334

<211> 1030

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (59)

<223> n equals a,t,g, or c

<220>

<221> misc feature
<222> (989)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1006)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1023)
<223> n equals a,t,g, or c

<400> 334
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acctcatgga cgtgcctggg ggtgtggctt ggcttccctt gattttggcc ggtggatgac 120
gctgtcctga ccacaccac tccttgctgc agcctgkag tcttccactt tcgccttggt 180
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ctgagcagtg tgatttcaca gctctcctcc ctctggagcc tcccytacc cccggcacc 540
tcccccaacc tcccccaacc ccacctgacc tggaagctat ggctccctc ctcaagaagg 600
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cgccactacc accaccacca ctaccaccag cccctccct cccctgtcc ctccctcct 720
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acgaggccgg gcaggaggaa gtggggatgc cgcctctgcc cccgccacag cagccccctc 840
ctccttctcc acctcaacct tctgccttg gcccctacc cacatcctgc caccaccgca 900
ggggaccgca agcaaaagaa gagagaccag aacaagtcgg cggtytytgag gtaccgccag 960
cggaaggggg caggaggggt tgagggcynk gggaagggga agttgncagg gggttgggaa 1020
gnaagggaa 1030

<210> 335
<211> 2127
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (72)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (2098)
<223> n equals a,t,g, or c

<220>
<221> misc feature

<222> (2114)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2117)

<223> n equals a,t,g, or c

<400> 335

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gaactgcaca gagacctcgc agccccgaga actgtcgccc tccacgatg tggctccgtg 180
cctttatcct ggccactctc tctgcttccg cggcttgggc agggcatccg tcctcgccac 240
ctgtggtgga caccgtgcat ggcaaagtgc tggggaagtt cgtcagctta gaaggatttg 300
cacagcctgt ggccattttc ctgggaatcc cttttgcaa gccgcctctt ggaccctga 360
ggtttactcc accgcagcct gcagaacctt ggagctttgt gaagaatgcc acctcgtacc 420
ctcctatgtg caccgaagat cccaaggcgg ggcagttact ctcaagcta ttacaaacc 480
gaaaggagaa cattcctctc aagctttctg aagactgtct ttacctcaat atttactc 540
ctgctgactt gaccaagaaa aacaggctgc cggatgatgg gtggatccac ggaggggggc 600
tgatggtggg tgcggcatca acctatgatg ggctggccct tgctgcccac gaaaacgtgg 660
tggtggtgac cattcaatat cgcctgggca tctggggatt cttcagcaca ggggatgaac 720
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gagaaagtgt ctctgttctt gttttgtctc cattggccaa gaacctctt caccgggcca 900
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tatctctgga cttacaggga gacccagag agagtcaacc ccttctgggc actgtgattg 1140
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tcccctacat ggtcgggaatt aacaagcagg agtttggtct gttgattcca atgcagttga 1260
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cctacatgta tgagtctcag taccgtccaa gcttctcatc agacatgaaa cccaagacgg 1560
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gggtggtggg ggcaggggac agaggccatg aaggagcaag ttttgtattt gtgacctcag 2040
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gttcccaatt tacnaanggg tgcttg 2127
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<210> 336

<211> 847

<212> DNA

<213> Homo sapiens

<220>
<221> misc feature
<222> (291)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (334)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (829)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (847)
<223> n equals a,t,g, or c

<400> 336
ccgccatgcc gttcctggag ctggacacga atttgcccgc caaccgagtg cccgcggggc 60
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tccccactcc ttctctcacg ccaagctctg acttttcgtg ctccacgacg ccgcggctcc 180
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ctcgggtccc gtccccagag gtagcccgcc cggntccaac ttcgggcaaa attttcatgt 360
ccccctgcgg accgcgtgaa cgtgacggta cggccggggc tggccatggc gctgagcggg 420
tccaccgagc cctgcgcgca gctgtccatc tcctccatcg gcgtagtggg caccgccgag 480
gacaaccgca gccacagcgc ccacttcttt gagtttctca ccaaggagct agccctgggc 540
caggaccgga tacttatccg ctttttcccc ttggagtctt ggcagattgg caagataggg 600
acggatcatga cttttttatg attgggcacg gagggatcca gggcatctgt gaactggctg 660
cttcttccag agagatctct tggcagagtg agggcctgga gataaccagc tttggattat 720
cccgcatgca acattcctgt gatcacataa tcctcttctt catcctcata tgaaataaat 780
gaagagagct tcctcattca aaaaaaaaaa aaaaaaaccc cgggggggnc cggtaaccca 840
ttggccn 847

<210> 337
<211> 702
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (21)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (150)
<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (669)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (679)

<223> n equals a,t,g, or c

<400> 337

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cgcctcttc cgctgcgtgc cggaccatgg cgcaggggca gcgcaagttt caggcgcaca 120
aacccgcaaa gagtaagacg gcagcggcan cctctgaaaa gaatcggggc ccaagaaaag 180
gcggtcgtgt tatcgtctcc argaaggcgc gcgtcgtgca gcagcaaaag ctcaagaaga 240
acctagaagt cggaatccgg aagaagatcg aacatgacgt ggtgatgaaa gccagcagca 300
gcctgccc aaagctggca ctgctgaagg cccagccaa gaagaaagg gcagctgccg 360
ccacctctc caagacacct tctgaggac gctggccca gtgcaggcca acatcccacc 420
ccctacctcc atatgggacc ttgcaagtca tcccacaggc tgcactgtca ggaagaggac 480
cctgtcccc agcactgggc ttcacctaga acttcagtgg gggccaagg tgctgagaac 540
ccagcaatga ccaggaagat acagtcacta acttcacttg tccccgtgcc cttcccagg 600
tcctgcctcc acagggtttaa ccagaacaa taaacctggc tttgtcaama aaaaaaaaaa 660
agggccggnc gttttagang atccagctta cgtaccgtgc tt 702
```

<210> 338

<211> 875

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (791)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (813)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (830)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (861)

<223> n equals a,t,g, or c

<400> 338

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aaatggcaaa aaagaaaata tccttgagtt tgtaatctag ttacagaagt aaggcataca 120
cacacacaaa gataacagta cctagagaga gagtgtgtgt gagtgtgctg gtctctgtgt 180
gtgcacgtgc acgctcatgg ccaaagtgtg gcactctaca taaaggaggc aggagttcct 240
ataggctatt taatgtaaga gaaactatct ttctcctgtt ccagctgtat cagatactcg 300
ttccgcaaca cagaaatgac tcagaatctc agacaaaatg tattatttgt tcaattttaa 360
ttttgctact acattcataa ctcttaaatt gttaggctgt ttcatTTaca tcaaagttat 420
ctcacaaaag agaaggcagg aaacgTTTTg tgagtgccta ttctatgtca aacactgtgt 480
tggcaccata ttttacaagt ttttttctc ttctcacagt gatcttTga gttagtTact 540
tatattttta ttagaactca ttattctggg taccctcaa tgagaattag agaggTtaa 600
taccttttcc tagattccca cagcaggaag gtgggcatag ctgtttTgtc tgacaccaga 660
acccatctca ccacactgct ttacagtctt cctgaaggga cattttgagg tggggggggg 720
ccttcaaagc tcagaggact ggggttkgaa tgggtttaat ttttgcaagg gatccatgtc 780
catgccaggg ngtttacaat tctttaactt cnttccaaa ttcgtgtgtt ccattaggga 840
catttgggtt acatccgggc nggggagggg caggg 875
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<210> 339

<211> 1448

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1427)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1432)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1440)

<223> n equals a,t,g, or c

<400> 339

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cagcgccact agcctcattg tgcccaggag ttctccaaac ccgcgctgcg gagtgagtga 60
ccaagttccg gccagttcga cctcgaggat ccagaggtgg agacgggtact acctcccagc 120
tctgttttcc atccccctca ggtccttcct cgggaggcgg cgaaggcggt ccaccctgcg 180
cgtgatcctt yatgccggc ccctgccccct ccctccgggt ggaacttccc cctcaccgcc 240
agacttaagc tgaggatcgt tggatctctg gcggggtgca gaactgagcc caggccacag 300
taccctattc acgctctgtg cttgtgccaa gggggcaatg gcggcttcct gtgttctact 360
gcacactggg cagaagatgc ctctgattgg tctgggtacc tggaagagtg agcctgggtca 420
ggtaaaaagca gctgttaagt atgcccttag cgtaggctac cgccacattg attgtgctgc 480
tatctacggc aatgagcctg agattgggga ggccctgaag gaggacgtgg gaccaggcaa 540
ggcggtgcct cgggaggagc tgtttgtgac atccaagctg tggaacacca agcaccacc 600
cgaggatgtg gagcctgccc tccggaagac tctggctgac ctccagctgg agtatctgga 660
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tgctgatggg actatatgct acgactccac ccactacaag gagacttggg aggtcttggg 780
ggcactgggtg gctaaggggc tgggtgcaggc gctgggcctg tccaacttca acagtccgga 840
```

```

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gagagtccca agggatgcag ggcacacctt gtaccccttt aatgaccctg actgagacca 1320
cagcttcttg gcctcccttc cagctctgca gctaattgagg tcctgccaca acggaaagag 1380
ggagttaata aagccattgg agcatccaaa aaaaaaaaaa aaaaaanayc tngsggccgn 1440
caagggaa 1448

```

<210> 340

<211> 843

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (812)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (822)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (829)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (838)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (841)

<223> n equals a,t,g, or c

<400> 340

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tgccctcttaa gcaagagatt cattgcagct cagcatggct cagaccagct catacttcat 120
gctgatctcc tgccctgatgt ttctgtctca gagccaaggc caagaggccc agacagagtt 180
gccccaggcc cggatcagct gcccagaagg caccaatgcc tategctcct actgctacta 240
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gggcaacctg gtgtctgtgc tcaccaggc cgagggtgcc tttgtggcct cactgattaa 360
ggagagtggc actgatgact tcaatgtctg gattggcctc catgaccca aaaagaaccg 420
ccgctggcac tggagcagtg ggtccctggt ctctacaag tcctggggca ttggagcccc 480

```

```
aagcagtgtt aatcctggct actgtgtgag cctgacctca agcacaggat tccagaaatg 540
gaaggatgtg ccttgtgaag acaagttctc ctttgtctgc aagttcaaaa actagaggca 600
gctggaaaat acatgtctag aactgatcca gcaattacaa cggagtcaaa aattaaaccg 660
gaccatctct ccaactcaac tcaacctgga cactctcttc tctgctgagt ttgccttggt 720
aatcttcaat agttttacct accccagtct ttggaaccyt aaataataaa aataaacatg 780
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naa 843
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<210> 341

<211> 1293

<212> DNA

<213> Homo sapiens

<400> 341

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acggatatcc tctgttgggg gagaagcaac attttgtgat tttccaaaaa taaaccatgg 180
aattctatat gatgaagaaa aatataagcc attttccag gttcctacag gggaagtgtt 240
ctattactcc tgtgaatata attttgtgtc tccttcaaaa tcattttgga ctgcgataac 300
atgcacagaa gaaggatggt caccaacacc aaagtgtctc agactgtgtt tctttccttt 360
tgtggaaaat ggtcattctg aatcttcagg acaaacacat ctggaagggtg atactgtgca 420
aattatttgc aacacaggat acagacttca aaacaatgag aacaacattt catgtgtaga 480
acggggctgg tccaccctc ccaaatgcag gtccactgac acttcctgtg tgaatccgcc 540
cacagtacaa aatgctyata tastgtcgag acagatgagt aaatatccat ctggtgagag 600
agtacgttat saatgtagga gcccttatga aatgtttggg gatgaagaag tgatgtgttt 660
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gaatcaatca taaartgcac acctttatc agaactttag tattaatat gttctyaatt 1140
tcatttttwa tgtattgttt tactcctttt tattcatcag taaaattttg gattaatttg 1200
tgaaaatgta attataagct gagaccggtg gctctcttct taaaagcacc atattaaatc 1260
ctggaaaact aaaaaaaaaa aaaaaaaact cgc 1293
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<210> 342

<211> 1273

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (6)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (483)

<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1247)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1262)
<223> n equals a,t,g, or c

<400> 342
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aggaggaaga aaggagggcc acaaaggccg ggcgaggcag tatacaagcc ctgaggagat 120
cgacgcgcag ctgcaggctg agaagcagaa ggccaggga gaagaggagc aaaaagaagg 180
tggagatggg gctgcagggtg accccaaaaa ggagaagaaa tctctagact cagatgagag 240
tgaggatgaa gaagatgact accagcaaaa gcgcaaaggc gttgaagggc tcatcgacat 300
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ccaggcaaaa catgctccac aaattcaact tgtatatttg gcagattaaa cttgacatta 1200
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gnggtttaa tta 1273

<210> 343
<211> 1793
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (1251)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1267)
<223> n equals a,t,g, or c

<400> 343


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gactacagcg atgatgggtg ggtgaatttg aaccggcaag gcttcagcta ccagtgtccc 180
caggggcagg tgatagtggc cgtgaggagc atcttcagca agaaggaagg ttctgacaga 240
caatggaact acgcctgcat gcccacacca cagagcctcg gggaaccac ggagtgtctg 300
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tgttgtcgtc acagcaagag gtgcccatac tcctgctggc taacaacaga atatccagg 480
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<210> 344

<211> 1672

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (95)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1667)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1668)

<223> n equals a,t,g, or c

<400> 344

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<210> 345

<211> 2109

<212> DNA

<213> Homo sapiens

<400> 345

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<210> 346

<211> 1714

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (21)

<223> n equals a,t,g, or c

<400> 346

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tggaagcact tagaacatcc ctcaaatgt cgtcaaccgc gagccagaac cccacaggcc 240
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ttaagggaatt tttgaagaat tacttgacaa atcttcttaa ggatggagaa gatttgatgg 540
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<210> 347

<211> 1672

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1667)

<223> n equals a,t,g, or c

<400> 347

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<210> 348
 <211> 1483
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc feature
 <222> (19)
 <223> n equals a,t,g, or c

<400> 348
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<210> 349
 <211> 1842
 <212> DNA
 <213> Homo sapiens

<400> 349
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<210> 350

<211> 3008

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (9)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (59)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (65)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1307)

<223> n equals a,t,g, or c

<400> 350

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aaaaaaaaa 3008

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<210> 351
<211> 2756
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (1597)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (2540)
<223> n equals a,t,g, or c

<400> 351
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gctgcccccg cgggcgcgct ccctgaagtc ctttgtggtc acctcagtgg tggctttccc 180
cacggactcc aaaacagtac agaggacca ggacaacagc tgcagctttg gcctgcacgc 240
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cccaaattgt  tacacctgcg  gggccacca  tcgtccaccc  cagtgtgcac  gcctgcaggc  2220
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cagggctcca  aatctgccta  gaaaacctct  cgcttcctca  gcctccaaag  tggagctggg  2340
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<210> 352

<211> 1645

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (97)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1574)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1596)

<223> n equals a,t,g, or c

<400> 352

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atataagcct  aagtttttat  tcataagttt  tattgaagtt  ctgatcggtc  cccttcagaa  180
atttttttat  attattcttc  aagttacttt  cttatttata  ttgtatgtgc  attttatcca  240
ttaatgtttc  atactttctg  agagtataat  acccttttaa  aagatatttg  gtataccaat  300
acttttcttg  gattgaaaac  tttttttaa  ctttttaaaa  tttggggcac  tctgtatgca  360
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gatacagtta  caatttattt  gacaaggttg  taattctaga  atatgcttaa  taaaatgaaa  480
actggccatg  actacagcca  gaactgttat  gagattaaca  tttctattga  gaagcttttg  540
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gttaaaggac  tctgtgccat  cttacaacct  tggatgaatt  atcctgccaa  cgtgaaaacc  780
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gtttttctta  cactcatttg  aatgctttca  agcatttgta  aacttaaaaa  atgtataaag  900
ggcaaaaagt  ctgaaccctt  gttttctgaa  atctaatacag  ttatgtatgg  tttctgaagg  960
gtaattttat  tttggaatag  gtaaaggaaa  cctgttttgt  ttgtttttcc  tgagggctag  1020
```

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atgcattttt tttctcacac tcttaatgac ttttaacatt tatactgagc atccatagat 1080
atattcctag aagtatgaga agaattattc ttattgacca ttaatgtcat gttcatttta 1140
atgtaataata attgagatga aatgttctct gggttggaaca gatactctct ttttttctt 1200
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agaatttaat gatcagggaa attcattatt tctatatgtg gaaactttt gcttcgaata 1380
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<210> 353

<211> 1637

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (738)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (771)

<223> n equals a,t,g, or c

<400> 353

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cgtggacaat ggctacttgg agggactggg gcgcggcctg aaggccgggg tgctcagcca 180
ggccgactac ctcaacctgg tgcagtgcga gacgctagag gacttgaaac tgcacttgca 240
gagcactgat tatggtaact tcctggccaa cgaggcatca cctctgacgg tgtcagtcac 300
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tgagccactc gccagcttcc tagacttcat tacttacagt tacatgatcg acaacgtgat 420
cctgctcatc acaggcacgc tgcaccagcg ctccatcgct gagctcgtgc ccaagtgcc 480
cccactaggc agcttcgagc agatggaggc cgtgaacatt gctcagacac ctgctgagct 540
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gcatgtcact ttcattgttcc tccctaactc cctgacctga gaaccctggg gcctgggggc 1440
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agagtgtgtg tgccttggg gcctgggggg atgttgetcc tcagctccct ccctcagccc 1560
tgccccctctg agacaataaa actgccctct ctaaggccaa aaaaaaaaaa aaaaaaaaaa 1620
aaaaaaaaaa aaaaaaa                                     1637

```

<210> 354

<211> 1119

<212> DNA

<213> Homo sapiens

<400> 354

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cggcacgagc ccgcgccccg cgaggctccg ggggtctcggg cttccgcctt cttgctgccc 60
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ccctgcgggg agtcggcccc cgaccttgcc ggcttcaccc tcctaattgcc agcagtatct 180
gttggaatg ttggccagct tgcaatggat ctgattattt ctacactgaa tatgtctaag 240
attggttact tctataccga ttgtcttgtg ccaatgggtg gaaacaatcc atatgcgacc 300
acagaaggaa attcaacaga acttagcata aatgctgaag tgtattcatt gccttcaaga 360
aagctggtg ctctacagt aagatccatt tttattaagt ataaatcaaa gccattctgt 420
gaaaaactgc tttcctgggt gaaaagcagt ggctgtgcca gagtcatgt tctttcragc 480
agtcattcat atcagcgtaa tgatctgcag cttcgtagta ctcccttccg gtacctactt 540
acaccttcca tgcaaaaaag tgttcaaaat aaaataaaga gccttaactg ggaagaaatg 600
gaaaaaagcc ggtgcattcc tgaaatagat gattccgagt tttgtatccg cattccggga 660
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ttctgatcta atttctgtt tataccttat acccaaaaca cttactacca acacagctgt 960
taaacattct atacaaaaaa attgtatgat ctggtattag gaaattactt tcacagtaaa 1020
tatcaaagaa aaaagattaa rggctctctt gccatgctt tcatcatatg caccaaattg 1080
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```

<210> 355

<211> 738

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (654)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (689)

<223> n equals a,t,g, or c

<400> 355

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ggcacgaggg acttgctgct ggetgccgcc gccgccactg gaaagctgaa atccttcgcc 60
cggaaattca tcaatttgaa tgaattcaca acctatggca gcgargaaag caccaaaccg 120
gcctccgtcc gggccctgct gtttgamatc tccttcctca tgctgtgcca tgtggccag 180

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```

acctatggtt caraggtgat tctgtccgag tcgcgcacag gagctgaggt gcccttcttc 240
gagacctgga tgcagacctg catgcctgag gagggcaaga tcctgaaccc tgaccacccc 300
tgcttcgcc ccgactccac caaagtggag tccctggtgg ccctgctcaa caactcctcg 360
gagatgaagc tagtgagat gaagtggcat gaggcctgtc tcagcatctc agccgccatc 420
ttggaaatcc tcaatgcctg ggagaatggg gtccctggcct tcgagtccat ccagaaaatc 480
actgataaca tcaaaggga ggtatgcagt ctggcggtgt gtgctgtggc ttggcttgtg 540
gcccacgtcc ggatgctggg gctggatgag cgtgagaagt cgctgcagat gatccgccag 600
ctggcagggc cactgtttag ygagaacacc ctgcagttct acaatgagag ggtngtgatc 660
atgaactcga tcctgggagc gcatgtgtnc cgacgtgctg cagcagacag ccacgcagga 720
ttcaagtttc cctccaac 738

```

<210> 356

<211> 1966

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (56)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (788)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1753)

<223> n equals a,t,g, or c

<400> 356

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acgcttcagt tctgctctgc aaggatatat aataactgat tgggtgtgcc gtttaataaa 180
agaatatgga aactgaacag ccagaagaaa cttccctaa cactgaaacc aatggtgaat 240
ttggtaaacg ccctgcagaa gatatggaag aggaacaagc atttaaaaga tctagaaaca 300
ctgatgagat ggttgaatta cgcattctgc ttcagagcaa gaatgctggg gcagtgattg 360
gaaaaggagg caagaatatt aaggctctcc gtacagacta caatgccagt gtttcagtcc 420
cagacagcag tggccccgag cgcattattga gtatcagtgc tgatattgaa acaattggag 480
aaattctgaa gaaaatcacc cctacccttg aagagggcct gcagttgcca tcaccactg 540
caaccagcca gctcccgcgc gaatctgatg ctgtggaatg cttaaattac caacactata 600
aagggaagtga ctttgactgc gagttgaggc tgttgattca tcagagtcta gcaggaggaa 660
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attatgatga tatgagccct cgtcaggag cacctcccc tcctcccga cgaggcggc 1080
ggggtggtag cagagctcgg aatcttcctc ttctccacc accaccacct agagggggag 1140

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acctcatggc ctatgacaga agagggagac ctggagaccg ttacgacggc atgggttggtt 1200
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aatcttgccct ggnaggaagc cttgaaccaa gcaaacttct gcatttctct ggtgaaaact 1800
gctgccaaaa ccacttgta aaaattgtac agagcctgta ggaaaatata gaagggtcca 1860
ttgggatgtt ggcctagttc tgtgtgggaa gacttagtgg attttgtttg ttttagata 1920
actaaatcgg ccaacaaatc accgttcttg cctatgggac cggggc 1966

```

<210> 357

<211> 1562

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (16)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (18)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (260)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (262)

<223> n equals a,t,g, or c

<400> 357

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tttgagggcc cagttcttga tcacaggtat tatgcaggtg gatgctccc gcattacatc 180
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cttggcatca gtagtcaaag tgatcgaggc aaacactata ttaggagAAC caaacgattc 420
tctcatacta aaagcgtatt tctgcatgca cgctctgacc ttgaagtagc acattacaag 480
ctgaaaccca gaagcctcat gctccattac gagttccttc agagagttaa gcggctgccc 540
ctggagtaca gctacgggga atacagagat ctcttccgtg attttgggac ccactacatc 600

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acagaggctg tgcttggggg catttatgaa tacaccctcg ttatgaacaa agaggccatg 660
gagagaggag attatactct taacaacgct catgcctgtg ccaaaaatga ttttaaaatt 720
ggtggtgcc a ttgaagaggt ctacgtcagt ctgggtgtgt ctgtaggcaa atgcagaggt 780
attctgaatg aaataaaaaga cagaaacaag agggacacca tgggtggagga cttggtgggc 840
ctggtacgag gaggggcaag tgagcacatc accaccctgg cataccagga gctgccgacg 900
gcggacctga tgcaggagtg gggagacgct gtgcagtaca acccagccat catcaaagtt 960
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aggcagaaca tgaagcaggc actggaggag ttccagaagg aagttagtct ctgccactgt 1080
gctccctgcc aaggaaatgg agtccctgtc ctgaaaggat cacgctgtga ctgcatctgt 1140
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cg 1562

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<210> 358

<211> 1931

<212> DNA

<213> Homo sapiens

<400> 358

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gcctgacttt tctgtccctt gttctgcagg attagtattc tgttacagac ctctagtttt 1860
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aaaaaaaaaa a 1931
```

<210> 359

<211> 869

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (869)

<223> n equals a,t,g, or c

<400> 359

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ccaaagtgga tgcactgaag aagatgttgt tggatcaggg gggctttgcc ccgtgttttc 180
taggctgctt tctccactg gtaggggcac ttaatggact gtcagcccag gacaactggc 240
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tagtcttatt cccaccacat actaggcact ccataaatat ctgttgaacc ttcatgacct 660
tatcaacttt acaccatat cccagcaaata gccactcatc cccactcttc atagacacat 720
ttgttactct aacctgcct aggtctcttg tagctccagc tctttagaga ctcccggaac 780
cctttatatg gtgcctcagt aaatatgtta ttaaatatgt aatccggaaa aaaaaaaaaa 840
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 869
```

<210> 360

<211> 561

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (521)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (525)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (560)

<223> n equals a,t,g, or c

<400> 360

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tctctggaga gcagcagcca tggccctacg ctaccctatg gccgtggggc tcaacaaggg 180
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caaacacacc aagttcgtgc gggacatgat tcgggaggtg tgtggctttg ccccgtacga 300
gcggcgcgcc atggagttac tgaaggtctc caaggacaaa cgggccctca aatttatcaa 360
gaaaaggggtg gggacgcaca tccgcgccaa gaggaagcgg gaggagctga gcaacgtact 420
ggccgccatg aggaaagctg ctgccaaaga agactgagcc cctcccctgc cctctccctg 480
aaataaagaa cagcttgaca gaaaaaaaaa aaaaaaaaaa ntcgnggggg gggccgggtac 540
ccattcgccc tawagggggn g                                     561

```

<210> 361

<211> 1680

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (33)

<223> n equals a,t,g, or c

<400> 361

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gctcattagc ttatcaaaga ctgagaagtc ccgctgttac agaaataatt tagtttgctg 300
tattaactgc tcctgggcct ggagcagtat tcccacctta agattcccag catccctgtg 360
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ttggggggcg ctttctcttt cttccccagg gaattctcta gcagagggag gggaccacc 480
ccagttagga agtagattgc tgcctctagc cagagacctg aactggggaa tttgaacatt 540
cctttacatt gttggagaaa tgaagccaaa gttattcaga tggttttccc aggctaaagg 600
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tctggggcca tttgcagact caggaaagga tttctacagt gttctataaa agccaaaaga 1560
gagagtgggt ttgggaagag tgagggtggt tggggagagg ggaccgatgt gcctcattgt 1620
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<210> 362
<211> 740
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (591)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (709)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (718)
<223> n equals a,t,g, or c

<400> 362
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cgttacctct tcacctccca tctcatttca ctgtgtagct cagtctctcc cacgcacata 180
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gataggctat ctccccacct cccaccctac tccccactat attcccgttt tgaccacctc 360
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tgaaaggggt tagggaaggg 740

<210> 363
<211> 1324
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (385)
<223> n equals a,t,g, or c

<400> 363
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<210> 364

<211> 2853

<212> DNA

<213> Homo sapiens

<400> 364

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aatattctta ttttaatacg ctgtagaagg taggtgtgga acctccatgc taccatgtgc 180
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```

<210> 365

<211> 1837

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (3)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (136)

<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (749)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1816)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1829)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1832)
<223> n equals a,t,g, or c

<400> 365

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aaaaaaaaaa aaaacncgag ggggggcccng gnaccca 1837

<210> 366

<211> 1823

<212> DNA

<213> Homo sapiens

<400> 366

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<211> 898

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<213> Homo sapiens

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<221> misc feature

<222> (17)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (25)

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<222> (30)

<223> n equals a,t,g, or c

<400> 367

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<211> 1117

<212> DNA

<213> Homo sapiens

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1117

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<211> 2226

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

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<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (35)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (36)

<223> n equals a,t,g, or c

<400> 369

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<210> 370

<211> 3636

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1937)

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310

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<211> 4039

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1085)

<223> n equals a,t,g, or c

<400> 371

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ccagatggct gtattcacat gtaggttttg gctgtaatct aaacaattgg acagattaaa 3960
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agatgaaaaa aaaaaaaaaa 4039

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<210> 372

<211> 1599

<212> DNA

<213> Homo sapiens

<400> 372

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cagcgaacag aattgggatg ggagccacgc tggacatcca gagacagcag agaattggagc 180
tgctggaccg gcagctgatg ttctctcagt ttgcacaagg gaggcgacag agacagcagc 240
agggaggaat gatcaattgg aatcgtcttt ttctctcttt acgtcagcga caaacgtaa 300
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ttaaaaaaaaa aaaaaaaaaa aaaaaaaaaa agggcgcc 1599

```

<210> 373

<211> 464

<212> DNA

<213> Homo sapiens

<400> 373

313

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ccttatgaat acggtaaatg tggcaaagcc tttaggcaga ggacagacct taaaaaacat 180
cagaaaaatgc ataccgarga gaaaccctat gaatgtaatg aatgtgggaa agcctttagc 240
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<210> 374

<211> 890

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (886)

<223> n equals a,t,g, or c

<400> 374

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gagcaacatg cccaagtttt attgtgacta ctgcgataca tacctcacc atgactctcc 180
atctgtgaga aagacacact gcagtggaa gaaacacaaa gagaatgtga aagactatta 240
tcagaaatgg atggaagagc aggctcagag cctgattgac aaaacaacgg ctgcatttca 300
acaaggaaag atacctccta ctccattctc tgctcctcct cctgcagggg cgatgatacc 360
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gggccctccc atgatgccaa tgatggggccc tcctcctcct gggatgatgc cagtgggacc 480
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ctgtcctatg aaagagaata gttttggagg ggagaagtgg gacaaaaaag atgcagtttt 780
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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaanaaaa 890

```

<210> 375

<211> 1874

<212> DNA

<213> Homo sapiens

<400> 375

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gttcaggaac ttaggctaga aaggaacaca gtaaaactgaa ttgatccgtt tagaagttta 60
caatgaagtt tcttctaata ctgctcctgc aggccactgc ttctggagct cttcccctga 120
acagctctac aagcctggaa aaaaataatg tgctatttgg tgaaagatac ttagaaaaat 180
tttatggcct tgagataaac aaacttccag tgacaaaaat gaaatatagt ggaaacttaa 240
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tcagggaat gccagggggg ccctgatgga ggaaacatta tatcacctac agaatacaata 420
attacacacc tgacatgaac cgtgaggatg ttgactacgc aatccggaag gctttccaag 480
tatggagtaa tgttaccctc ttgaaattca gcaagattaa cacaggcatg gctgacattt 540

```

```
tggtgggttt tgcccggtga gctcatggag acttccatgc ttttgatggc aaaggtggaa 600
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acgaattctg gactacacat tcaggaggca caaacttggt cctcactgct gttcacgaga 720
ttggccattc cttaggtctt ggccattcta gtgatccaaa ggccgtaatg ttccccacct 780
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agtatatata ttttggtcca aataaaattg aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1860
aaaaaaaaaa aagc 1874
```

<210> 376

<211> 2018

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1997)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2012)

<223> n equals a,t,g, or c

<400> 376

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gccacatccc ggcagccctc ctacckgcgc acgtggtgcc gccgctgctg cctcccgcctc 60
gccctgaacc cagtgcctgc agccatggct cccggccagc tcgccttatt tagtgtctct 120
gacaaaaccg gccttggtga atttgcaaga aacctgaccg ctcttggttt gaatctggtc 180
gcttccggag ggactgcaaa agctctcagg gatgctggtc tggcagtcag agatgtctct 240
gagttgacgg gatttcctga aatgttgggg ggacgtgtga aaactttgca tcctgcagtc 300
catgctggaa tcctagctcg taatattcca gaagataatg ctgacatggc cagacttgat 360
ttcaatctta taagagttgt tgccgtgcaat ctctatccct ttgtaaagac agtggcttct 420
ccaggtgtaa stgttgagga ggctgtggag caaattgaca ttggtggagt aaccttactg 480
agagctgcag ccaaaaacca cgctcgagt acagtgggtg gtgaaccaga ggactatgtg 540
gtggtgtcca cggagatgca gagctccgag agtaaggaca cctccttgga gactagacgc 600
cagttagcct tgaaggcatt cactcatacg gcacaatatg atgaagcaat ttcagattat 660
```

```

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atthttaccac aactgtttt ttggcttgct tatgtgtagg tgaacagtca cgctgaaac 1920
tttgaggata acttttttaa aaaataaaac agtatctctt aatcactgga aaaaaaaaaa 1980
aaaaaaaaaa aaaaccncgg ggggggcccc gnacccca 2018

```

<210> 377

<211> 818

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (818)

<223> n equals a,t,g, or c

<400> 377

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ctctggcgat cgaggggtcc tagtacaccg caatcatgtc tattatgtcc tataacggag 120
gggccgctcat ggccatgaag gggaagaact gtgtggccat cgctgcagac aggcgcttcg 180
ggatccaggc ccagatgggt accacggact tccagaagat ctttcccatg ggtgaccggc 240
tgtacatcgg tctggccggg ctgcgcaactg acgtccagac agttgcccag cgcctcaagt 300
tccggctgaa cctgtatgag ttgaagggaag gtcggcagat caaaccttat accctcatga 360
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gccccatggg gactgatgac tttgtgggtc gtggcacctg cgccgaacaa atgtacggaa 540
tgtgtgagtc cctctgggag cccaacatgg atccggatca cctgtttgaa accatctccc 600
aagccatgct gaatgctgtg gaccgggatg cagtgtcagg catgggagtc attgtccaca 660
tcatcgagaa ggacaaaatc accaccagga cactgaaggc ccgaatggac taaccctgtt 720
cccagagccc actttttttt ctttttttga aataaaatag cctgtctttc aaaaaaaaaa 780
aaaaaaaaaa accccggggg gggccgggaa ccaaattn 818

```

<210> 378

316

<211> 2565

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1508)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2565)

<223> n equals a,t,g, or c

<400> 378

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acaactgaag tctcttgaca aacacctcac ccctgcctcc gggatgaaag ggggtaacct 120
agacctgaat gggcttgacc atctcacaac tgctcgcgtg acgaccgcat tcgtggcagg 180
taagaagatt gctgtatcaa ctcaagaaag cagtaacttc actgtctttg tattttgaat 240
tgcaacaaca actttgatat caacaatgaa gcaatgatat ctaagaacma aagartattt 300
gccaacagtc atcataatat caagtgattg tataagcaga aacaagctgt cacagacctg 360
tgcgtcagct aatatatgga gaatgcttct tctgatacta ttacttaga ggcagtttta 420
atataaatca tttcaattat atctacatca aataaaataa aaatgagtga agcccccaga 480
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catgcagatg aagacgatga ggaggaagat gattctycac cagaaaggca gattgtgggt 600
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tacatgatat aggcaatttc ttttgtatgt taattcrgtc aaaaatacta cccacttgat 2160
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317

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gttttctaata ctgatgtgag ctcatgttac acagactttt agtaagtaac ccgtgactag 2220
aaaataaact ggatgcttag gagagagtgt cagatgtata agatgctaata aaaacctgtt 2280
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<210> 379

<211> 1680

<212> DNA

<213> Homo sapiens

<400> 379

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ccaaagtgtc ggaattccag gcatgagcca ctgcgcccag tctacacact aattcttggt 60
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aatagttaca cacaagaggg aaactggaag ccaaactctg tacagtattg tgtagaaagt 180
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```

<210> 380

<211> 1267

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (4)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (214)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1165)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1255)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1262)

<223> n equals a,t,g, or c

<400> 380

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atgtatatgg ctttactcaa gcaratctca tctcatgaca ggcagccacg tctcaacatg 180
ggtaaggggt gggggtggag gggaatgtgt gcanctgttt tacctaggca ccatcattta 240
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atcatttctt tagagggaag gaataatcat tcaaatgaac tttaaaaaag caaatttcat 660
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<210> 381

<211> 1031

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1015)

<223> n equals a,t,g, or c

<400> 381

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caaaaatggt tcaacttccta acagttttcc tttttccact gtgtgactga aagctcctat 180
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ggagggcacc gggtagcctt ttcacacttg gggattaggg gagtgagaaa agatttgggc 600
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tcaatctaaa ccaatgtaca ggtgtacaat gaaaaattta aatgcttagt tatttttccc 780
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gggtgggggt tgaaagttgt tatctttaaa tacatgtaca aatcgttgtc aaaagtaacg 960
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ggggggggccc c 1031
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<210> 382

<211> 1597

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1577)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1579)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1597)

<223> n equals a,t,g, or c

<400> 382

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agcggctgtc caatcgagtc gtgcgtgtgt tgggctgtaa cccgggtccc atgacctcc 180
aaggcaccaa cacctaccta gtggggaccg gcccaggag aatcctcatt gacactggag 240
aaccagcaat tccagaatac atcagctgtt taaagcaggc tctaactgaa tttaacacag 300
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caatccagga aattgtagtg actcactggc accgagatca ttctggaggc ataggagata 360
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tgattaagac tgagggagcc actctaagag ttctatatac ccctggccac actgatgac 540
acatggctct actcttagaa gaggaaaatg ctatcttttc tggagattgc atcctagggg 600
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aaattcaaca atacatttct cacagaaata ttcgagagca gcaaattctt acattatttc 780
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attcatgcaa atgaattttt ggtgattgaa aaatattaaa ttcccaattt aaagtaaaaa 1560
aaaaaaaaaa aaaaaangnc cccggggggg ggcgggn 1597
```

<210> 383

<211> 175

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (95)

<223> n equals a,t,g, or c

<400> 383

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ccaaacatct actacaaggt atgagggtc ctctnacgtg gctatcctga atccagccct 120
tcttgggggtg ctccctccagt ttaaattcct ggtttraggg acamctstaa catct 175
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<210> 384

<211> 2171

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (2166)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2170)

<223> n equals a,t,g, or c

<400> 384

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cggacttcct gggaaagtgg ggaaggccaa ggggaaaaaa acacaaatgg ctgaagtttt 180
gccttctccg cgtggtcaaa gagtcattcc acgaataacc atagaaatga aagcagaggc 240
agaaaagaaa aataaaaaga aaattaagaa tgaaaatact gaaggaagcc ctcaagaaga 300
tggtgtggaa ctagaaggcc taaaacaaag attagaaaag aaacagaaaa gagaaccagg 360
tacaaagaca aagaaacaaa ctacattggc atttaagcca atcaaaaaag gaaagaagag 420
aaatccctgg tctgattcag aatcagatag gagcagtgac gaaagtaatt ttgatgtccc 480
tccacgagaa acagagccac ggagagcagc aacaaaaaca aaattcaca tggatttgga 540
ttcagatgaa gatttctcag attttgatga aaaaactgat gatgaagatt ttgtcccac 600
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gggggncccn g 2171
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<210> 385

<211> 2364

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (19)

<223> n equals a,t,g, or c

<400> 385

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gcctaccaga tgccagtcac cgcacaaggc actgggtata tggatatccc aaacaagaga 180
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aaattaatag ttttatctgg gtacaaataa acaggtgcct gaactagttc acagacaagg 600
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```

<210> 386

<211> 2864

<212> DNA

<213> Homo sapiens

<400> 386

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aaacagatcc tctcccagac taacaccata cccatcattg gttccccctc cagcaagcgg 180
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agaagccctt tgctgcagcc aattatcgag ggcgaaactg cttccttctt caaggagata 240
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ctgaaaaccg atttcagtgc acgatgcttt ctggaycaat tcgaagatga cgctgatgga 360
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<210> 387

<211> 2683

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (40)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2649)

<223> n equals a,t,g, or c

<400> 387

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tttcctagat ccacactttc aaagagaaac ccctccagaa ctcccaccct gacagcccaa 180
caccaccttc ctcttggtt ccagggggca gcccagtgga atggaaagaa tgtgggattt 240
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gttttgatg gagttaaaact tgatgccagt gggcagtgca tgtggaaagt atcagagtaa 2340
gsctctcccc tccagagccc tgagtttctt ggctgcatga aggttttctt tagaatcaga 2400
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325

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attgtagcca gtttcttttg ccagaaggat gaatacttgg atattactga aagggagggg 2460
tgagatggg tgtggcagtg tatggtgtgt gatttttatt ttcttctttg gtcattgggg 2520
ccaaggagaa aggcattgaat cttccctgtc aggcctcttac ascacaggca ctgtgtctac 2580
tgtctggaag acatgtcccc gtggctgtgg ggccgctgct tctgtttaaa taaaagtggc 2640
ctggaarmna aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 2683

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<210> 388

<211> 1446

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (35)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (37)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (57)

<223> n equals a,t,g, or c

<400> 388

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aagaactaaa acgactcact atagggaataa actananacg cctgacagga aaccggnccg 60
gaattcccg gtcgaccac gcgtccgaar argagggtgga ggargagggt gatgttgata 120
gtgatgaaga agaggaggaa gatgaggaga gctcctcgga gggcttgagg gctgaggact 180
gggcccagg agtagtgagg gccggtggca gcttcggggc ttatggtgcc caggaggaaag 240
cccagtgcc tactctgcat ttcttggaag gtggggagga ctctgattca gacagtgagg 300
aagaggacga tgaggaagag gatgatgaag atgaagacga cgatgatgat gaggaggatg 360
gtgatgaggt gcctgtaccc agctttgggg aggccatggc ttactttgcc atggtcaaga 420
ggtacctgac ctcttcccc attgatgacc gcgtgcagag ccacatcctc cacttggaac 480
acgatctggt tcatgtgacc aggaagaacc acgccaggca ggccggagtt cgaggtcttg 540
gacatcaaa ctgagtcact ggacctagct gtgccccaa cctagattgg cagcaccacc 600
ccagggcaga ggactctctg ggcacccgct gtgcatggag ccagagtga gagccccaga 660
tccttttagta atgcttcccc tggctcctgca acaggcccg tcacctcggc cgggcccggg 720
gctgaggtca gcctcactgc ctgcttattg cctctttctc agaatcctct ttctcccca 780
tttgccctg ggctcagggg accagggtggg gcgggtgggg agctgtccgg tgctaccaca 840
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cctgcttctg cctgctttcc acctccccag tccctttctc tggccctgtc catgtgactt 1140
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ccaaggcgc ttccttgagg gcagctgcag gcccctgccc tctctccct ctctggcagg 1260
gccccatcct gggcagaggg gcctggggct gggcccagag tccagccgct cagctgctcc 1320
tttcccagtt tgatttcaat aaatctgtcc actcccctt tgtgggggtg aacgttttaa 1380
cagccaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1440

```


aaaaaa

1446

<210> 389

<211> 723

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (705)

<223> n equals a,t,g, or c

<400> 389

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gggcaagacc tcatgcctaa aaaataaaga gaaagcagag taaaactgga ctctgagata 60
ygactaaagt tctgtgtgat acgtgtgcct tathtagctc aagacattcc tggagcacct 120
ataaaaactg acttgtaatc caggctatgt ctctttttag cttcgtaatc tttggcaagg 180
ccattggatt cttcagctgt acaattagga gactcgatca ggtgattgcc tttctcagct 240
gtcagttctc taatttcagg cttggtagct tgtaggaact gaaattgcaa ttaaacctt 300
tataaactca aactaaatca tgaattacag aaaaagtcca ttcttccaaa acttgatgtt 360
accacactta caagtttaaa atatgaagtc gactgtttaa aggattctgc atatattcta 420
gtgtgcacat tcagaaacat ttttcttgga aaaagtaccc aacatttttt ataactgcac 480
atattaattt attgccagaa taaattgcat tgcattgctaa ataaagtcag ataattcaaa 540
tccatttgct tttatgtagt ttttcttcta aatgtcaaca ttttggaatt aaaatgttta 600
tggttttata tgagggtagg aaatcttaac tgctttgggg ggtattgttt ataggctttt 660
tgttatgggg ccggtagttt tttaataggg ggattgcccc tttcnaccgt ttggggggccc 720
ggg                                              723

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<210> 390

<211> 1046

<212> DNA

<213> Homo sapiens

<400> 390

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cgggtcgacc caccgctccg gtccaccaca ggcaccgcag ctcatctacc aggaatatgt 60
gaaccagcca gatgttcggc cccagccccc ttcgccccga gagggccctc tgcctgctgc 120
ccgacctgct ggtgccactc tggaaagggc caagactctc tccccagga agaattgggt 180
cgtcaaagac gtttttgcct ttgggggtgc cgtggagaac cccgagtact tgacacccca 240
gggaggagct gcccctcagc cccaccctcc tccctgcctc agcccagcct tcgacaacct 300
ctattactgg gaccaggacc caccagagcg gggggctcca cccagcacct tcaaagggac 360
acctacggca gagaaccag agtacctggg tctggacgtg ccagtgtgaa ccagaaggcc 420
aagtccgcag aagccctgat gtgtcctcag ggagcagga aggcctgact tctgctggca 480
tcaagagggt ggagggccct ccgaccactt ccagggaac ctgccatgcc aggaacctgt 540
cctaaggaac cttccttcct gcttgagttc ccagatggct ggaaggggtc cagcctcggt 600
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agggtccagt ggatgccaca gcccagcttg gccctttcct tccagatcct gggactgaa 720
agccttaggg aagctggcct gagaggggaa gcggccctaa gggagtgtct aagaacaaaa 780
gcgaccatt cagagactgt ccctgaaacc tagtactgcc ccccatgagg aaggaacagc 840
aatgggtgtc gtatccaggc tttgtacaga gtgcttttct gtttagtttt tacttttttt 900
gttttgtttt tttaaagatg aaataaagac ccagggggag aatgggtgtt gtatggggag 960
gcaagtgtgg ggggtccttc tccacacca ctttgtccat ttgcaaatat attttggaaa 1020
acaaaaaaaa aaaaaaaaaa aaaaaa                                     1046

```

<210> 391
<211> 699
<212> DNA
<213> Homo sapiens

<400> 391
cggatggggc gtaggtgggc ggtgygccc cagctacctg ggtaaggccc aagatggctg 60
tcttcgcctt agtactcgtg tgaagttggc ggggacgggt cctgtcatct tcttgggctt 120
atttggtgtg ctgttgaagg ggggagacta gagaaatggc agggaaacctc ttatccgggg 180
caggtaggcg cctgtgggac tgggtgcctc tggcgtgcag aagcttctct cttggtgtgc 240
ctagattgat cggataaagg ctcactctcc cgcccccaa agtggttgat cgttggaaacg 300
agaaaagggc catgttcgga gtgtatgaca acatcgggat cctgggaaac tttgaaaagc 360
accccaaaga actgatcagg gggcccatat ggcttcgagg ttggaaaggg aatgaattgc 420
aacgttgtat ccgaaagagg aaaatggttg gaagtagaat gttcgctgat gacctgcaca 480
accttaataa acgcatccgc tatctctaca aacactttaa ccgacatggg aagtttcgat 540
agaagagaaa gctgagaact tcggaaaagg ctcatctgtc accctggaga agggaaactg 600
tacttttccc tgtgaggaaa cggttttgta ttttctctgt aataaaatgg ggcttctttg 660
gaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aagtcgacc 699

<210> 392
<211> 1545
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (24)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (25)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (54)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (58)
<223> n equals a,t,g, or c

<400> 392
taccggtccg gaattcccgg gtcnnccac gcgtccgcgc actgccgccg ccgnttcngc 60
ccggactcgg acgcgtggta gccccaggat gggtagttc aacgagaaga agacaacatg 120
tggcaccgtt tgcctcaagt acctgctgtt tacctacaat tgctgcttct ggctggctgg 180
cctggctgtc atggcagtgg gcactctggac gctggccctc aagagtgact acatcagcct 240
gctggcctca ggcacctacc tggccacagc ctacatcctg gtgggtggcg gcactgtcgt 300

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catggtgact ggggtcttgg gctgctgcgc caccttcaag gagcgctcga acctgctgcg 360
cctgtacttc atcctgctcc tcatcatctt tctgctggag atcatcgctg gtatcctcgc 420
ctacgcctac taccagcagc tgaacacgga gctcaaggag aacctgaagg acaccatgac 480
caagcgctac caccagccgg gccatgaggc tgtgaccagc gctgtggacc agctgcagca 540
ggagttccac tgctgtggca gcaacaactc acaggactgg cgagacagtg agtggatccg 600
ctcacaggag gccgggtggc gtgtgtgtccc agacagctgc tgcaagacgg tgggtggctct 660
ttgtggacag cgagaccatg cctccaacat ctacaagggtg gagggcggct gcatacacc 720
gttgagagacc ttcattccagg agcacctgag ggtcattggg gctgtgggga tcggcattgc 780
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ctgagtacca ggggctgggc tccctgatga caccaccctt gtgccatcac cataacctct 960
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catgtgcctc tgcggggcag ggccttcctg gttttgtaca ctgctgtacc cagatgccta 1440
caaccatccc tgccacatac aggtgctcaa taaacacttg tagagcagaa aaaaaaaaaa 1500
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 1545

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<210> 393

<211> 749

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (490)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (748)

<223> n equals a,t,g, or c

<400> 393

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gcttgagccc aggagtcttg ggctgttagt gcgctatgcc gatcgggtgt ccgcactaag 60
ttyggcatca atatggtgac ctcccgggag cggrggacca ccagggtgcc taaggagggg 120
tgaaccggyc caggctcgaa acggagcagt tttccttgag cggagattca ggtttttcag 180
gtgggtctgg tgagctgggg tctttacaac ccctgccttg gctctgctga caaaaactcc 240
cgcaaaaggc cccctcgtag caaggctccg ccgccacgag actttcacat caatctcttc 300
cgcatgcagc cctggctgag gcagcacctg ggggatgtcc tgaatttttt acccctctag 360
ccatggccac tgagccctct gctgccctgc cagaatctgc cgccctcca tcttctacct 420
ctgaatggcc acccttagac cctgtgatcc atcctctctc ctgactgagt aaatccgggt 480
ctctaggatn ccagaggcag cgcacacaag ctgggaaatc ctcagggtct ctaccagcag 540
gactgcctcg ctgccccacc tcccgtcctt tggcctgtcc ccagattcct tccctgggtg 600
acttgactca tgcttgtttc actttcacat ggaatttccc agttatgaaa ttaataaaaa 660
tcaatggttt ccacaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 720
aaaaaaaaaa aaaaaaaaaa aaaaaaana

```

<210> 394
<211> 611
<212> DNA
<213> Homo sapiens

<400> 394
gcgcggcggc ggcgggggtgg ctggggccggc ggcggcgggcg gtacgaggcg cgcgctcggg 60
gtcccggtcg cgaggaggag gaggatgtgg cgcgcggagg ggaaatggct gccgaaaaca 120
agccggaaga gcgtttccca aagtgtattc tgcggaacta gcacctactg tgttctcaac 180
accgtgccac ctatagaaga tgatcatggg aacagcaata gtagtcatgt aaaaatcttt 240
ttaccgaaaa agctgcttga atgtctgccg aaatgttcaa gtttaccaaa agagaggcac 300
cgctggaaca ctaatgagag atcatgatgc agccgtcctt ttggatttct ttttaataat 360
gtgtgaccct tcacctttga tcccctgacc tgcattacct tggttaaccat ttcatttttt 420
aatttaattt cattttttta ttttggtgta caagctgtaa catttcatct ttcaaagtgt 480
aacacgctga tttcctcaaa tagagatacc cctttgagtg ataaatttgc aaaatgctgt 540
cttcattttc tgtattaaaa ttcatttcag ttttaaaata aagtgtaatc tgtgttttca 600
tccttttaaa a 611

<210> 395
<211> 1856
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (1851)
<223> n equals a,t,g, or c

<400> 395
gttggcgcgc ggtgcgcggt gcgtagtctg gagctatggt ggtggtggca gccgcgccga 60
accgcggcca cgggaccctt aaagttctgc ttctgtcggg gcagcccgc tccgcgcggc 120
gagccccggc cgccaggcc ctgccgctca tgggtgccagc ccagagaggg gccagcccgg 180
aggcagcgag cggggggctg ccccaggcgc gcaagcgaca gcgcctcacg cacctgagcc 240
ccgaggagaa ggcgctgagg aggaaactga aaaacagagt agcagctcag actgccagag 300
atcgaaagaa ggctcgaatg agtgagctgg aacagcaagt ggtagattta gaagaagaga 360
acaaaaaact tttgctagaa aatcagcttt tacgagagaa aactcatggc cttgtagtgt 420
agaaccagga gttaagacag cgcttgggga tggatgccct ggttgctgaa gaggaggcgg 480
aagcaagggg aatgaagtga ggccagtggc cgggtctgct gagtccgcag cactcagact 540
acgtgcacct ctgcagcagg tgcaggccca gttgtcacc ctccagaaca tctcccatg 600
gattctggcg gtattgactc ttcagattca gagtctgata tcctgttggg cattctggac 660
aacttgacc cagtcattgt cttcaaagtgc cttccccag agcctgccag cctggaggag 720
ctcccagagg tctaccaga aggaccagt tccttaccag cctccctttc tctgtcagt 780
gggacgtcat cagccaagct ggaagccatt aatgaactaa ttcgttttga ccacatatat 840
accaagcccc tagtcttaga gataccctct gagacagaga gccaaagctaa tgtggtagt 900
aaaatcgagg aagcacctct cagccccctc gagaatgatc accctgaatt cattgtctca 960
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caatactgtt gcccttttcc ttgactatta cactgcctgg aggatagcag agaagcctgt 1260

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tgagacatat tactggaagt aagaaatatt actataattg agaactacag cttttaagat 1440
tgtactttta tcttaaaagg gtggtagttt tccctaaaat acttattatg taagggtcat 1500
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gtagcttctg aaagggtgctt tctccattta tttaaaacta cccatgcaat taaaagggtac 1800
aatgcaaaaa aaaaaaaaaa aaaaaaaacc ggggggsgcc ccggaaccaa nttccc 1856
```

<210> 396

<211> 2651

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (45)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (47)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2642)

<223> n equals a,t,g, or c

<400> 396

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tttgaacgag acgaagacgg aaccggagcc gggtgcgggc agtggacgcg gttctgccga 120
gagccgaaga tggcagtgaa cgtatactca acgtcagtgga ccagtataaa cctaagtcga 180
catgacatgc tggcctggat caatgagtct ctgcagttga atctgacaaa gatcgaacag 240
ttgtgctcag gggctgcgta ttgtcagttt atggacatgc tgttccctgg ctccattgcc 300
ttgaagaaag tgaaattcca agctaagcta gaacacgagt acatccagaa cttcaaaata 360
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aaaggaaagt ttcaggacaa ttttgaattc gttcagtggt tcaagaagtt tttcgatgca 480
aactatgatg gaaaagacta tgaccctgtg gctgccagac aagggtcaaga aactgcagtg 540
gctccttccc ttgttgctcc agctctgaat aaaccgaaga aacctctcac ttctagcagt 600
gcagctcccc agaggcccat ctcaacacag agaaccgctg cggctcctaa ggctggccct 660
gggtgtggtgc gaaagaaccc tgggtgtggc aacggagacg acgaggcagc tgagttgatg 720
cagcaggtca acgtattgaa acttactgtt gaagacttgg agaaagagag ggatttctac 780
ttcgaaagc tacggaacat tgaattgatt tgccaggaga acgaggggga aaacgaccct 840
gtattgcaga ggattgtaga cattctgtat gccacagatg aaggctttgt gatacctgat 900
gaagggggcc cacaggagga gcaagaagag tattaacagc ctggaccagc agagcaacat 960
cggaattctt cactccaaat catgtgctta actgtaaaat actccctttt gttatcctta 1020
gaggactcac tggtttcttt tcataagcaa aaagtacctc ttcttaaagt gcactttgca 1080
gacgtttcac tccttttcca ataagtttga gttaggagct tttaccttgt agcagagcag 1140
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ggatgcgggt cactactgaat gctggagaga tggtatgtaa tatgctgagg tggcgacctc 1260
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ctttggtcta aaaggaacat ttaaaaagtt gccctgtaaa gttatttggg gtcattgacc 1560
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gttatccccg aaatttctat gtattatatt ttttggggaa gtgaggtgtg cccagttttt 1740
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gcaggtgatc atgctgcaag ttctttcttg acctctggca aaggagtggt tcagtgaagg 1980
ccatcggtac cttgggatct gccaggctgg ggtgttttcg gtatctgctg ttcacagctc 2040
tccactgtaa tccgaatact ttgccagtgc actaatctct ttggagataa aattcattag 2100
tgtgttacta aatgttaatt ttcttttgcg gaaaatacag taccgtgtct gaattaatta 2160
ttaatattta aaataactta ttcttaact ctccctcatt tgctttgccc acagcctatt 2220
cagttccttt gtttggcagg attctgcaaa atgtgtctca cccactactg agattgttca 2280
gcccctgatg tatttgtatt gatttgtttc tgggtgtagc ttgtcctgaa atgtgtgtag 2340
aaagcaagta ttttatgata aaaatgttgt gtagtgcatt ctctgtgttg aattcagagg 2400
aaaaccaga ttcagtgatt aacaatgcca aaaaatgcaa gtaactagcc attgttcaaa 2460
tgacagtggg gctatttctc ttttgtggcc ttttagactt ttgttgccct aaaattccat 2520
tttattggga acccattttc cacctggtct ttcttgacag ggtttttttc tactttaaac 2580
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angggaccca a 2651

<210> 397

<211> 2507

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (2489)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2496)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2504)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2505)

<223> n equals a,t,g, or c

<400> 397

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<210> 398

<211> 1273

<212> DNA

<213> Homo sapiens

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<221> misc feature
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 <223> n equals a,t,g, or c

<220>
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 <223> n equals a,t,g, or c

<220>
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 <223> n equals a,t,g, or c

<400> 398

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<210> 399
 <211> 3774
 <212> DNA
 <213> Homo sapiens

<400> 399

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<210> 400

<211> 1522

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (479)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1471)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1481)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1487)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1501)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1508)

<223> n equals a,t,g, or c

<400> 400

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ctccaaaatg gatcaaaatg tttgttttgg atgaagcaga tgaaatgttg agccgtggnt 480
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<210> 401

<211> 1370

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1223)

<223> n equals a,t,g, or c

<400> 401

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1370

<210> 402

<211> 1412

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (51)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1406)

<223> n equals a,t,g, or c

<400> 402

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<210> 403

<211> 1750

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

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<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (40)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (44)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (70)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (107)

<223> n equals a,t,g, or c

<400> 403

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<210> 404

<211> 1339

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (150)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1330)

<223> n equals a,t,g, or c

<400> 404

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gattgttaan ctgcctctt 1339

<210> 405

<211> 482

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (440)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (469)

<223> n equals a,t,g, or c

<400> 405

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aacatagcat cttaattggn gtgtgtatga aggtgggtgt tacctcttnc tagccacca 480
gg 482
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<210> 406

<211> 1413

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (9)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (24)

<223> n equals a,t,g, or c

<400> 406

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ggaattcggc acgaggtttg gtgggggttac acgcgggttc aacatgcgta tcgaaaagtg 120
ttatttctgt tcggggccca tctatcctgg acacggcatg atgttcgtcc gcaacgattg 180
caaggtgttc agattttgca aatctaaatg tcataaaaac tttaaaaaga agcgcaatcc 240
tcgcaaagtt aggtggacca aagcattccg gaaagcagct ggtaaagagc ttacagtgga 300
taattcattt gaatttgaaa aacgtagaaa tgaacctatc aaataccagc gagagctatg 360
gaataaaaact attgatgcga tgaagagagt tgaagaaatc aaacagaagc gccaagctaa 420
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agtcaagcaa aacatccatc ttatccgagc ccctcttgca ggcaaaggga aacagttgga 540
agagaaaatg gtacagcagt tacaagagga tgtggacatg gaagatgctc cttaaaaaatc 600
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<210> 407

<211> 1693

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1548)

<223> n equals a,t,g, or c

<400> 407

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gagctccgcc cggagggtact gtgaggcgt tagagctggc ggtggatgac ttccgcattc 480
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tcgagacagt tct 1693

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<210> 408

<211> 1342

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (107)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1332)

<223> n equals a,t,g, or c

<400> 408

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aaaaaaaaaa anaaaaaac ca 1342
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<210> 409

<211> 2417

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (107)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (680)

<223> n equals a,t,g, or c

<400> 409

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aaaaaaaaa aaaaaaa 2417
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<210> 410

<211> 1401

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1394)

<223> n equals a,t,g, or c

<400> 410

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tgatcccaaa atgcaaactg acaaaccctt tgaccagacc acaattagtc tgcagatggg 180
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aaaaaaaaaa gggnggccgt t 1401
```

<210> 411

<211> 3016

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (399)

<223> n equals a,t,g, or c

<400> 411

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ccggggctgg tgattggagg aaaccccggtg tctgcggacg gctgtagcct gtgagcagcg 120
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aagtattgaa caaaagacgg aaggtgctga gaaaaaacag cagatggctc gagaatacag 480
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<210> 412

<211> 958

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (930)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (934)

<223> n equals a,t,g, or c

<400> 412

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aaccaggaaa aactcgccaa actgcaggca caagtgcgca ttggtgggaa aggaactgct 180
cgcagaaaaga agaaggtggt tcatagaaca gccacagcag atgacaaaaa acttcagttc 240
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```

<210> 413

<211> 500

<212> DNA

<213> Homo sapiens

<400> 413

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atgcaaagag gttggatcaa gtttaaatga ctgtgctgcc cctttcacat caaagaacta 180
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gaaagaactt gcatgttggg gaaggaagaa gtgggggtgga agaagtgggg tgggacgaca 300
gtgaaatcta gagtaaaacc aagctggccc aaggtgtcct gcaggctgta atgcagttta 360
atcagagtgc catttttttt tttgttcaaa tgattttaat tattggaatg cacaattttt 420
ttaatatgca aataaaaagt ttaaaaactt aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 480
gcggccgctc gaattaagcc 500
```

<210> 414

<211> 3397

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (15)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (24)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (3081)

<223> n equals a,t,g, or c

<400> 414

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ccctgtttg ggatcatgtc ttcagattca gctgaccctt tctattggat gagagtgtt 360
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cgagctctct tcaacggagc ccaaaagtta tttggcatga tcattactat cgccagctct 540
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```

<210> 415

<211> 2880

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (5)

<223> n equals a,t,g, or c

<400> 415

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<210> 416
<211> 1616
<212> DNA
<213> Homo sapiens
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```
<220>
<221> misc feature
<222> (12)
<223> n equals a,t,g, or c
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<220>
<221> misc feature
<222> (1610)
<223> n equals a,t,g, or c
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<220>
<221> misc feature
<222> (1611)
<223> n equals a,t,g, or c
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<220>

<221> misc feature

<222> (1616)

<223> n equals a,t,g, or c

<400> 416

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```

<210> 417

<211> 1815

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (270)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1184)

<223> n equals a,t,g, or c

<400> 417

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```

```

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<210> 418

<211> 1966

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (15)

<223> n equals a,t,g, or c

<400> 418

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<210> 419

<211> 2852

<212> DNA

<213> Homo sapiens

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<221> misc feature

<222> (2838)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2843)

<223> n equals a,t,g, or c

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<210> 420

<211> 2705

<212> DNA

<213> Homo sapiens

<400> 420

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<210> 421

<211> 1901

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1828)

<223> n equals a,t,g, or c

<400> 421

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cycsaggggg ggcccgtccc caattcggcc tatagttagt c 1901
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<210> 422

<211> 2477

<212> DNA

<213> Homo sapiens

<400> 422

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<210> 423

<211> 777

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (759)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (764)

<223> n equals a,t,g, or c

<400> 423

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<210> 424

<211> 1649

<212> DNA

<213> Homo sapiens

<400> 424

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<210> 425

<211> 1608

<212> DNA

<213> Homo sapiens

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<221> misc feature
<222> (1598)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1600)
<223> n equals a,t,g, or c

<400> 425
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gacctgcata gggtcctgcg gggtctccaa caaggctaag gacacagcgt gggtagtgga 240
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<210> 426
<211> 1794
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (1789)
<223> n equals a,t,g, or c

<220>
<221> misc feature

<222> (1790)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1793)

<223> n equals a,t,g, or c

<400> 426

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<210> 427

<211> 770

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (14)

<223> n equals a,t,g, or c

<220>

<221> misc feature
<222> (40)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (97)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (618)
<223> n equals a,t,g, or c

<400> 427
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taaaaaatag aaattatctc actacttaaa tcccattttt ttcacttcat atgaaagaac 180
atattgatag tatattctat attatttcat agatctgtct gaaagagatt gggaacaaaa 240
atatctaatt gagatattct ttaatttttt acatagcagc tttatttttt ttattctgta 300
gtatcagcga aatcagtcac gtttatacct tgaatataaa tatcaggaat catgcaatta 360
tttctactat gtatttagta gtatcttata tttgtataac attattacat ttgcaaat 420
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ggaagtttac aatttgcctt tcacaaacat tagcagtcog gggcatggtg gctgragcct 720
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<210> 428
<211> 512
<212> DNA
<213> Homo sapiens

<220>
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<222> (18)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (30)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (38)
<223> n equals a,t,g, or c

<220>
<221> misc feature

<222> (484)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (491)

<223> n equals a,t,g, or c

<400> 428

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cactgggaac acttaccgag tgggtgacac ttatgagcgt cctaaagact ccatgatctg 120
ggactgtacc tgcacgggg ctgggcgagg gagaataagc tgtaccatcg caaaccgctg 180
ccatgaaggg ggtcagtcct acaagattgg tgacacctgg aggagaccac atgagactgg 240
tggttacatg ttagagtgtg tgtgtccttg taatggaaaa ggagaatgga cctgcaagcc 300
catagctgag aagtgttttg atcatgctgc tgggacttcc tatgtggtcg gagaaacgtg 360
ggagaagccc taccaaggct ggatgatggt agattgtact tgcctgggag aargcagcgg 420
acgcatcact tgcacttcta gaaatagatg caacgwtcag gacacaagga catctataga 480
attngagaca ncttgagcaa gaaggataat cg 512
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<210> 429

<211> 1470

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1346)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1347)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1357)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1387)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1415)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1454)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1462)

<223> n equals a,t,g, or c

<400> 429

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ttgggtgggg ggccgctgaa ctgacaagcg acatttcagc tcctttcacc cgccggaacc 180
ccggagccgg ggcccgcctca gccggcggtta ccatgaccaa ggccggtagc aagggcgagg 240
acctccgcga caagctggac ggcaacgaac tggacctgag cctcagcgac ctgaatgagg 300
tcccggtgaa ggagctggct gcccttccaa aggccaccat cctggatctg tcttgtaata 360
aactgactac tctaccgtcg gatctctgtg gcctcacaca cctgggtgaag ctagacctga 420
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tggatctcct caacaacaag ctggtcacct tgcctgtcag ctttgctcag ctcaagaacc 540
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<210> 430

<211> 434

<212> DNA

<213> Homo sapiens

<400> 430

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gaatccccag cccggaagct ctcccagctc ttcgcccttc ctgttacggg aggcactggt 180
gtcaccccca aacagagcct actgacagcc atccacatgg tgctgacaga gcatgacctt 240
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ccagccctgg rretacatgg cacacacagg cttttgaaaa ttgcctcaac ctgctcagtc 420
gcctcaacaa cctc                                     434
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<210> 431

<211> 1823

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1804)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1805)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1815)

<223> n equals a,t,g, or c

<400> 431

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cccagattca cagtatggtg aacttattga aaagtacatt aaagaaggaa agattgtacc 360
agttgagata accatcagtt tattaagag ggaaatggat cagacaatgg ctgccaatgc 420
tcagaagaat aaattcttga ttgatgggtt tccaagaaat caagacaacc ttcaaggatg 480
gaacaagacc atggatggga aggcagatgt atctttcgtt ctcttttttg actgtaataa 540
tgagatttgt attgaacgat gtcttgagag gggaaagagt agtggttagga gtgatgacaa 600
cagagagagc ttggaaaaga gaattcagac ctaccttcag tcaacaaagc caattattga 660
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<210> 432
<211> 3391
<212> DNA
<213> Homo sapiens

<220>
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<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (33)
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<222> (68)
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<220>
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<222> (99)
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<222> (114)
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<220>
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<222> (3293)
<223> n equals a,t,g, or c

<220>
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<222> (3391)
<223> n equals a,t,g, or c

<400> 432
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ggaaacccta attgaaagac ttgtaaagcc cacgcccatt atttaagtgg gaaatcgggt 180
gcctccaccc aacacagctg gctgccttag gaatgtaagc ctcagagagg agtgaagctc 240
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ccaatgttgc caacaatact gggccacatg ctgccagttg ctttggggcc aagaaggga 480
aagggaacaaa acctatagag gatccagcaa acgatacagt ggatttcctt aaaagaacga 540

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gtccagctcg aggcctatgag ctcttatttc agccagaggt ggttcggata tacatctcac 600
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tgtgtgctgg gcgctggacg tatggctgat acatccgctc tgctctgctg caagagaagg 720
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<210> 433

<211> 2553

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (2510)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (2516)

<223> n equals a,t,g, or c

<400> 433

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<210> 434

<211> 2532

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (2470)

<223> n equals a,t,g, or c

<400> 434

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368

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<210> 435

<211> 1822

<212> DNA

<213> Homo sapiens

<400> 435

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<210> 436

<211> 1030

<212> DNA

<213> Homo sapiens

<400> 436

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<210> 437

<211> 1632

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (14)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1602)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1616)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1617)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1628)

<223> n equals a,t,g, or c

<400> 437

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<210> 438

<211> 1016

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (27)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (993)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (994)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (995)

<223> n equals a,t,g, or c

<400> 438

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gactacccca gtcccaggga aggtggggcc ctgcccctag gatgctgcag cagagtgagc 780
aagggggccc gaatcgacca taaagggtgt agggggccacc tctccccct gttctgttgg 840
ggaggggtag ccatgatttg tcccagcctg gggctccctc tctggtttcc tatttgagc 900
tacttgaata aaaaaaatat ctttttctgg aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 960
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aannnggggg gggccccccc ccccca 1016
```

<210> 439

<211> 594

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (476)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (519)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (530)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (531)

<223> n equals a,t,g, or c

<220>

<221> misc feature
<222> (539)
<223> n equals a,t,g, or c

<400> 439

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ttgaaaaaacg ggtcgactgg cmcgwccsgc cgggagccag cggttctcca agcaccacagc 60
atcctgctag acgcgccgcg caccgacgga ggggacatgg gcagagcaat ggtggccagg 120
ctcgggctgg ggctgctgct gctggcactg ctctaccca cgcagattta ttccagtga 180
acaacaactg gaacttcaag taactcctcc cagagtactt ccaactctgg gttggcccca 240
aatccaacta atgccaccac caaggyggct ggtggtgccc tgcagtcaac agccagtctc 300
ttcgtggtct cactctctct tctgcatctc tactcttaag agactcaggc caagaaacgt 360
cttctaaatt tccccatctt ctaaacccaa tccaaatggc gtctggaagt ccaatgtggc 420
aaggaaaaac aggtcttcat cgaatctact aattccacac cttttaaaaa ttttnggga 480
acccaacca aagggtaaaa aaaaaaaaaa atttgggnt tttttgggn naaaggggna 540
aaaaaaattt ttcccccccc ccccaaaaaa aaaaaaaat ttttttttt tttt 594
```

<210> 440
<211> 1580
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (873)
<223> n equals a,t,g, or c

<400> 440

```
gcccacgcgt tcgcaaggct gccccatctg gcgctgatta tcctgctgct gccgccaccg 60
ctgctgctgc tctgcaaaat tcagctgctg cctctgtctt gaggacccca gcgcctttcc 120
cccggggcca tctgctgc agccacagcc tccctcctgg ggccctcct cactgcctgc 180
gccctgctgc cttttgccc gggccagacc cccaactaca ccagaccgt gttcctgtgc 240
ggaggggatg tgaaggggga atcaggttac gtggcaagt aggggttccc caacctctac 300
ccccctaata aggagtgc atggaccata acggtccccg agggccagac tgtgtccctc 360
tcattccgag tcttcgacct ggagctgcac cccgcctgcc gctacgatgc tctggaggtc 420
ttcgtgggt ctgggacttc cggccagcgg ctcgagcgt tttgtgggac cttccggcct 480
gcgcccctag tcgcccccg caaccagggt accctgagga tgacgacgga tgagggcaca 540
ggaggacgag gcttcctgct ctggtacagc gggcgggcca cctcgggcac tgagcaccaa 600
ttttgcgggg ggcggtgga gaaggcccag ggaaccctga ccacgcccga ctggcccag 660
tccgattacc ccccgggcat cagctgttcc tggcacatca tcgcgcccc ggaccaggtc 720
atcgcgctga ccttcgagaa gtttgacctg gagccggaca cctactgccg ctatgactcg 780
gtcagcgtgt tcaacggagc cgtgagcgac gactcccga ggctggggaa gttctgcggc 840
gacgcaktcc cgggtccat ctctccgaa ggnaatgaac tcctcgtcca gttcgtctca 900
gatctcagtg tcaccgctga tggcttctca gcctcctaca agaccctgcc gcggggcaact 960
gcaaagaag ggcaagggcc cggcccaaaa cggggaactg agcctaaagt caagctgccc 1020
cccaagtccc aacctccgga gaaaacagag gaatctcctt cagcccctga tgcaccacc 1080
tgcccaaagc agtgccgccg gacaggcacc ttgcagagca acttctgtgc cagcagcctt 1140
gtggtgactg cgacagtga gtccatggtt cgggagccag gggaggccct tgcctgact 1200
gtcagcttga ttggtgctta taaaactgga ggactggacc tgcttctcc acccactggt 1260
gcctccctga agttttacgt gccttgcaag cagtgcctcc ccatgaagaa aggagtcat 1320
tatctgctga tgggcccaggt agaagagaac agaggcccc tccttctcc agagagctt 1380
gtggttctcc accggcccaa ccaggaccag atcctacca acctaaagcaa gaggaagtgc 1440
```

```

ccctctcaac ctgtgcgggc tgctgcgtcc caggactgag acgcaggcca gccccggccc 1500
ctagccctca ggccttcttt cttatccaaa taaatgtttc ttaatgagga atgggtcaga 1560
tctccatgct tatggtaaaa 1580

```

```

<210> 441
<211> 1082
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc feature
<222> (136)
<223> n equals a,t,g, or c

```

```

<220>
<221> misc feature
<222> (462)
<223> n equals a,t,g, or c

```

```

<220>
<221> misc feature
<222> (465)
<223> n equals a,t,g, or c

```

```

<220>
<221> misc feature
<222> (1074)
<223> n equals a,t,g, or c

```

```

<400> 441
ctgccgagcg cctcttgagg ctgggctttc ccccgcggtg cggcgccagg agccgccttt 60
tccgctgggt gtcactcggg ggtggggaag atggcccatt caaaagcgcc gcgagggggc 120
ccggccagtg cccttnagtg agcgctcgca agaggacggc agaggcccgg cagctcggag 180
ctccgggacc ttgtggcgca tcaggacgag gctgtccctc tgccgggacc cagagccgcc 240
gcgcgcgctc tgccctcctg gtgttagcct cctctgcgag ctccgggagc gcggccgtgg 300
gagccgctgg ggcgaggacg gcgcgaggct gctgctgctg cccccggccc gcgcggctgg 360
aaacggagag gccgagccaa gcggcgggcc ctcttatgct gggaggatgc tggagagtag 420
cggctgcaaa gcgctgaagg agggcggtgt ggagaagcgc anacngggtt gttgcagctc 480
tggaagaaaa agtgttgcat cctcaccgag gaagggtgc tgcttatccc gcccaagcag 540
ctgcaacacc agcagcagca gcaacagcag cagcagcagc agcaacaaca gcccgggcag 600
gggcccggcg agccgtccca acccagtggc cccgctgtcg ccagcctcga gccgcccgtc 660
aagctcaagg aactgcactt ctccaacatg aagaccgtgg actgtgtgga gcgcaagggc 720
aagtacatgt acttcaactg ggtgatggca gagggcaagg agatcgactt tcggtgcccg 780
caagaccagg gctggaacgc cgagatcacg ctgcagatgg tgcaagtaca gaatcgtcag 840
gccatcctgg cgggtcaaac cagcgggcag aagcagcagc acctggtcca gcagcagccc 900
ccctcgagc cgcagccgca gccgcagctc cagccccaac cccagcctca gcctcagccg 960
caacccagc cccaatcaca accccagcct cagccccaac ccaagcctca gcccagcag 1020
ctccamccgt atycgcatyc amattcamat ycamaatctt atccttmatt tggnaaccaa 1080
aa 1082

```

```

<210> 442

```


<211> 1241

<212> DNA

<213> Homo sapiens

<400> 442

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agacgagcgt ggcgggccgcg gctgctcggg gccgcgctgg ttgccattg acagcggcgt 60
ctgcagctcg cttcaagatg gccgcttgct cgcattcatt ttctgctgaa cgacttttaa 120
ctttcattgt cttttccgcc cgettcgatc gcctcgsgcc ggctgctctt tccgggattt 180
tttatcaagc agaaatgcat cgaacaacga gaatcaagat cactgagcta aatccccacc 240
tgatgtgtgt gctttgtgga gggacttca ttgatgccac aaccataata gaatgtctac 300
attccttctg taaaacgtgt attgttcgtt acctggagac cagcaagtat tgtcctattt 360
gtgatgtcca agttcacaag accagaccac tactgaatat aaggtcagat aaaactctcc 420
aagatattgt atacaaatta gttccagggc ttttcaaaaa tgaaatgaag agaagaagg 480
atthttatgc agctcatcct tctgctgatg ctgccaatgg ctctaataa gataaggag 540
aggttgcaga tgaagataag agaattataa ctgatgatga gataataagc ttatccattg 600
aattctttga ccagaacaga ttggatcgga aagtaaacia agacaaagag aaatctaagg 660
aggaggtgaa tgataaaaga tacttacgat gccagcagc aatgactgtg atgcacttaa 720
gaaagtctct cagaagtaaa atggacatac ctaatacttt ccagattgat gtcattgatg 780
aggaggaacc tttaaaggat tattatacac taatggatat tgcctacatt tatacctgga 840
gaaggaatgg tccacttcca ttgaaataca gagttcgacc tacttgtaaa agaatgaaga 900
tcagtcacca gagagatgga ctgacaaatg ctggagaact ggaaagtga tctgggagt 960
acaaggccaa cagcccagca ggaggtattc cctccacctc ttcttgtttg cctagcccca 1020
gtactccagt gcagtctcct catccacagt ttcttcacat ttccagtact atgaatggaa 1080
ccagcaacag ccccgcggt aaccaccaat cttcttttgc caatagacct cgaaaatcat 1140
cagtaaatgg gtcattcagca acttctctctg gttgatacct gagactgtta aggaaaaaaa 1200
aaaaaaaaa accccggccg ctcccacttc agattggtaa c 1241
```

<210> 443

<211> 968

<212> DNA

<213> Homo sapiens

<400> 443

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cccacgcgtc cgcaggaagc caactatttg aaatgcacga gaaactaagt tgtatggcaa 60
actctgtaat aaaaaatcta cagtcacgtt ggagatcacc atcccatgaa aattctattt 120
agtattttca gagaaaattg aagggttttt taaacatcac tggatttctt gattgaggaa 180
acaagtcttg aaataatagc acaatttcaa agaagagact ctttgcaaag ttgataacat 240
ttcaaaccct gaaggacagt gacttattat gtwagttcaa tkttgtaagt ycattatgtw 300
agatcctttt tttttttcat aatatgtatt ctggctgct atgctggtt tttcaggaaa 360
tttaattatc ttactgagat gtgaaagcaa aactagtaac agaacttaca ttttatttca 420
tgctttctta aaccctgca tattctggtg aaacatgtaa aatactttta gtaaaattga 480
acatttttat ttgaattttt gctgaactga taaagggtgt tatatttttg tttgttkgtt 540
tgtttaattc atgtttgttg ggactgaggt ttaggaagtt tgttactggt taaaaacctc 600
aatgaaatg cgaaagaatt tgaatttttc ctgcatatgt caactttgga cagctttcaa 660
gaaaaatgag aaaagtttca acttctggcg gttaaaatat taatgcagaa tttactaaga 720
ttttattcat ttgcattagc aaatattcat gcagcagcag ttgactgaaa atttattctt 780
atgagacgta tagtattcat ttttaaatgc atgattgtac attatgtata gacgacaatg 840
tttttaattt ataaatttca ttctttgtta attgcattgg ttttctgca gcttattgtg 900
aataccttgg ttctgttcaa tagaaacatt ttgtatatat traatactga aatatcaaaa 960
aaaaaaaaa 968
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<210> 444
<211> 1360
<212> DNA
<213> Homo sapiens

<220>
<221> misc feature
<222> (114)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (302)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (330)
<223> n equals a,t,g, or c

<400> 444
cgccggagcg tcactctgcga ctccaatgcc actgcactgg agcttcccgg ccttcctctt 60
tccttgcgcc agccagcat ccccgcggt gtccgcgaga gtgctccacc gganccccac 120
cggaagaga ccgtgaccgc caccgccact tcccaggtag ccagcagcc tccagccgct 180
gcccgccttg gggaacaggc cgtcgcgggc cctgcccctc gactgtcccc agcagtacca 240
gcaaagaccg ccagtggtcc cagcctagcc ttgtggggag caaagaggag ccgccgccgg 300
angaaagtgg cagcggcggc gcaagcgcmn aaggagccac aggaggaacg gagccagcag 360
caggatgata tcgaagagct ggagaccaag gccgtgggaa tgtctaacga tggccgcttt 420
ctcaagtttg acatcgaaat cggcagaggc tcctttaaga cggctctaaa aggtctggac 480
actgaaacca ccgtggaagt cgcctggtgt gaactgcagg atcgaaaatt aacaaagtct 540
gagaggcaga gatttaaaga agaagctgaa atgttaaaag gtcttcagca tccaatatt 600
gttagatttt atgattcctg ggaatccaca gtaaaaggaa agaagtgcag tgttttggtg 660
actgaactta tgacgtcttg aacacttaaa acgtatctga aaaggtttaa agtgatgaag 720
atcaaagttc taagaagctg gtgccgtcag atccttaaag gtcttcagtt tcttcatact 780
cgaactccac ctatcattca ccgcgatctt aaatgtgaca acatctttat caccggccct 840
actggctcag tcaagrttg agacctcgtt ctggcaaccc tgaagcgggc ttcttttgcc 900
aagagtgtga taggtacccc agagttcatg gcccttgaga tgtatgagga gaaatatgat 960
gaatccgttg acgtttatgc ttttgggatg tgcattgctt agatggctac atctgaatat 1020
ccttactcgg agtgccaaaa tgctgcgcag atctaccgtc gcgtgaccag tgggggtgaag 1080
ccagccagtt ttgacaaagt agcaattcct gaagtgaagg aaattattga aggatgcata 1140
cgacaaaaca aagatgaaag atattccatc aaagaccttt tgaaccatgc cttcttccaa 1200
gaggaaacag gactacgggt agaattagca gaagaagatg atggagaaaa aatagccata 1260
aaattatggc tacgtattga agatattaag aaattaaagg gaaaatacaa agataaaaaa 1320
aaaaaaaaaa aaaaaaaaaa aaaaaacacc caccgtgccg 1360

<210> 445
<211> 1835
<212> DNA
<213> Homo sapiens

<220>

<221> misc feature
<222> (326)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1229)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1738)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1747)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1758)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1801)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1806)
<223> n equals a,t,g, or c

<220>
<221> misc feature
<222> (1831)
<223> n equals a,t,g, or c

<400> 445
tcgacccacg cgctccgggat gaggcccggc ctctcatttc tcctagccct tctgtttcttc 60
cttggccaaag ctgcagggga tttgggggat gtgggacctc caattcccag ccccggttc 120
agctctttcc caggtgttga ctccagctcc agcttcagct ccagctccag gtcgggctcc 180
agctccagcc gcagcttagg cagcggaggt tctgtgtccc agttgttttc caatttcacc 240
ggctccgtgg atgaccgtgg gacctgccag tgctctgttt ccctgccaga caccamcttt 300
cccgtggaca gagtggaaacg yttggnaatt cacagctcat gttctttctc agaagtttga 360
gaaagaactt tccaaagtga gggaaatatgt ccaattaatt agtgtgtatg aaaagaaact 420
gttaaacctta actgtccgaa ttgacatcat ggagaaggat accatttctt aactgaact 480
ggacttcgag ctgatcaagg tagaagtga ggagatggaa aaactggta tacagctgaa 540
ggagmstttt ggtggaagct cagaaattgt tgaccagctg gaggtggaga taagaaatat 600
gactctcttg gttagagaagc ttgagacact agacaaaaac aatgtccttg ccattcgcgc 660

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agaaatcgtg gctctgaaga ccaagctgaa agagtgtgag gcctctaaag atcaaaacac 720
ccctgtcgtc caccctcctc ccactccagg gagctgtggt catggtggtg tgggtgwacat 780
cagcaaacccg tctgtggttc agctcaactg gagagggttt tcttatctat atggtgcttg 840
gggtagggat tactctcccc agcatccaaa caaaggactg tattgggtgg cgccattgaa 900
tacagatggg agactggttg agtattatag actgtacaac acactggatg atttgctatt 960
gtatataaat gctcgagagt tgcggatcac ctatggccaa ggtagtggtg cagcagttta 1020
caacaacaac atgtacgtca acatgtacaa caccgggaat attgccagag ttaacctgac 1080
caccaacacg attgctgtga ctcaaactct ccctaagtct gcctataata accgcttttm 1140
atatgcta atgtgcttggc aagatattga ctttsctgtg gatgagaatg gattgtgggt 1200
tattttattca actgaagcca gcactggtna catggtgatt agtaaactca atgacaccac 1260
acttcagggtg ctaaactctt ggtataccaa gcagtataaa ccactctgctt ctaacgcctt 1320
catggtatgt ggggttctgt atgccacccg tactatgaac accagaacag aagagatttt 1380
ttactattat gacacaaaca cagggaaga gggcaaaacta gacattgtaa tgcataagat 1440
gcaggaaaaa gtgcagagca ttaactataa cccttttgac cagaaacttt atgtctataa 1500
cgatggttac cttctgaatt atgatcttct tgtcttgacg aagccccagt aagctgttta 1560
ggagttaggg tgaaagagaa aatgtttgtt gaaaaaatag tcttctccac ttacttagat 1620
atctgcaggg gtgtctaaaa gtgtgttcat tttgcagcaa tgtttargtg catagttcta 1680
ccactacaga gatctaggac atttgtcttg atttggtgag tctcttgggg atcatctngc 1740
ytttcangcg cmttttgnca taaagtcygt cyaggggtggg attgtcagag gtctaggggc 1800
ncttgnnggc ctaatggaac cttctgtga ngaag 1835

```

<210> 446

<211> 1355

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (55)

<223> n equals a,t,g, or c

<400> 446

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ggcacgagcg cgtcgacgag gaagtcgaag cggagatccc ggggtcgcgc gaganccgca 60
agcggagttg gtggcgcta tgctatcacc cgaggcagag cgagtgtgc ggtacctgt 120
agaagtggag gagctcgccg aggaggtgct ggcggacaag cggcagattg tggacctgga 180
cactaaaagg aatcagaatc gagagggcct gagggccctg cagaaggatc tcagcctctc 240
tgaagatgtg atggtttgct tcgggaacat gtttatcaag atgcctcacc ctgagacaaa 300
ggaaatgatt gaaaaagatc aagatcatct ggataaagaa atagaaaaac tgcggaagca 360
acttaaagtg aaggtcaacc gcctttttga ggcccaaggc aaaccggagc tgaagggttt 420
taacttgaac ccctcaacc aggatgagct taaagctctc aaggtcatct tgaaaggatg 480
agactcaaga accaagatgg gggaccagca acccccagc gtcattggag acccaggacc 540
ctccaacctt gacacctgta aggacaggat ctgccctgta agggccagcc gtcaggaatc 600
tgcccatgaa aacctctttg tagtgcttg ctactctgtg atggcaggag ggaaccttca 660
gcctgtctgg ctgctggacc tggacaccag ggctcgggtg acacaagatc tattgacggg 720
ccttggtagc caccagtggg tgtgtggggc agtggctgtg ggggtgtaag aatgactgca 780
acaggcactt cccaacaatg gcctgctgtt cacatggacc ctgagcaagg aaggaggag 840
ggaggggcag agtggagtgt cattccagca ttctctcag aaggagaga ggttttcagg 900
ctggtgccat gcgattggaa taaagcagga ggctcatggg tggttgctga atgaagaaca 960
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ccagctccaa ttttgactt tttccctgct tgattccaag agtaggtgct gcctagcagc 1080
ccttcgtggc cactctttac tcaggagggc cttgcagagt cctgcaccag gcctgggtga 1140

```

gtggatgcgc ctcttaccat atgacacgtg tcaagatgcc cttccgcccc ctctgaaagt 1200
ggggcccggc cagcactgct cgttactgtc tgccttcagt ggtctgaggt cccagtatga 1260
actgccgtga agtcaaaact cttatgtgtt cattaagggc tcaataaatg ttagctgaat 1320
gaawaaaaaa aaaaaaaaaa amawaaaaaa aaaaa 1355

<210> 447

<211> 375

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (153)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (313)

<223> n equals a,t,g, or c

<400> 447

tgcctctgtg tgtgtgcaag acagagagat aggctatttg tcaagtcagc tagttgccta 60
ggtatctttg tctcacatct ggctgtttcc tcctagagaa ccatccagtt ggctttccag 120
gtctggaggt gagctaattg atgagtgaat atnagcagtg ggtgttcctc atctctttga 180
ggatttgccct cagagttcac taccaaggga tttctggaac taggwgccat tctttacatc 240
agttcttgag ggttctttga tatcaggggc aaaatgatcc cttctctttt ctttcttata 300
tcctgtgctt tgnctcctgg gtgatttctc ttcaagtcag ttgtgggagg tgcctaggaa 360
caacgctaac acggg 375

<210> 448

<211> 1393

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1360)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1383)

<223> n equals a,t,g, or c

<400> 448

tctttttacat gtttaaattt aaaccattct tcgtgacccc ttttcttggg agattcatgg 60
caagaacgag aagaatgatg gtgcttgta ggggatgtcc tgtctctctg aactttgggg 120
tcctatgcat taaataattt tcctgacgag ctcaagtgtc ccctctgggc tacaatccct 180
ggcggtggtc cttcatccct tgggcaagca ttgcatacag ctcatggccc tccctctacc 240
ataccctcca cccccgttcg cctaagctcc cttctccggg aatttcatca tttcctagaa 300
cagccagaac atttgtgggc tatttctctg ttagtgttta accaaccatc tgttctaaaa 360

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gaagggctga actgatggaa ggaatgctgt tagcctgaga ctcaggaaga caacttctgc 420
agggtcactc cctggcttct ggaggaaaga gaaggagggc agtgctccag tggtagagaa 480
gtgagacata atggaatcag gcttcacctc caaggacacc tatctaagcc attttaaccc 540
tcgggattac ctagaaaaat attacaagtt tggttctagg cactctgcag aaagccagat 600
tcttaagcac cttctgaaaa atcttttcaa gatattctgc ctagacggtg tgaagggaga 660
cctgctgatt gacatcggct ctggcccccac tatctatcag ctccctctctg cttgtgaatc 720
ctttaaggag atcgtcgtca ctgactactc agaccagaac ctgcaggagc tggagaagtg 780
gctgaagaaa gagccagagg cctttgactg gtccccagtg gtgacctatg tgtgtgatct 840
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ggtgctgaag tgtgatgtga ctcagagcca gccactgggg gccgtcccct tccccccggc 960
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gatctcgcaa agttattctt ccaccatggc caacaacgaa ggacttttct ccctgggtggc 1260
gaggaagctg agcagacccc tgtgatgcct gtgacctcaa ttaaagcaat tcctttgacc 1320
tgtcaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1380
aanaaaaaaa aaa 1393
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<210> 449

<211> 1663

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (57)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (180)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (621)

<223> n equals a,t,g, or c

<400> 449

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gccagcaaaag ccctcagagg ccacctcaga ccgggtcagag ggcagcagcc gggacgcagn 180
ggtagcgacg agaacgagga gtcgagcggt gtggattacg tggaggtgac ggtcggggag 240
gaggatgcga tctcagatag atcagatagc tggagtcagg ctgcggcaga aggtgtgtcg 300
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tggctctctc ccagccatgg gccacccttg ccagtractc caagtggaac tacttagctc 480
gcgtgtgcct ggarggtgcg ggaagtccag cgactctcag acgcacctcc cagaggaccg 540
gtgggaattg ttcatagtgc caaagtccta mtactgcgtt ttcaatgggt ccttgtacat 600
agtttgctcc tctgscctag ncctcacctc ttgctatact ggraccgatt tgtacaatgt 660
```

380

```

gggaattttg ttaccytttt aatcaagggc aacttccttt tccagcacta ccattgtaag 720
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tatttttggt ttattaattt ggggaaaggg gtgttagcat tagtgccatg atatctactg 840
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ccacactgcc ccccatattga gtacrcgcga caagtcaaac gctaggaagt ttgaataaaa 1560
ccaatttttc taacttgttg ctcatattgt gtaactcaat aaagcaaaga ctaaacattt 1620
ttataaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 1663

```

<210> 450

<211> 1380

<212> DNA

<213> Homo sapiens

<400> 450

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aaaatgccag gaatgttctt ctctgctaac ccaaaggaat tgaaaggaac cactcattca 120
cttctagacg acaaaatgca aaaaaggagg ccaaagactt ttggaatgga tatgaaagca 180
tacctgagat ctatgatccc acatctggaa tctggaatga aatcttccaa gtccaaggat 240
gtactttctg ctgctgaagt aatgcaatgg tctcaatctc tggaaaaact tcttgccaac 300
caaactggtc aaaatgtctt tggaagtttc ctaaagtctg aattcagtga ggagaatatt 360
gagttctggc tggcttgtga agactataag aaacagagt ctgatctttt gccctgtaaa 420
gcagaagaga tatataaagc atttgtgcat tcagatgctg ctaaacaaat caatattgac 480
ttccgcactc gagaatctac agccaagaag attaaagcac caacccccac gtgttttgat 540
gaagcacaaa aagtcatata tactcttatg gaaaaggact cttatcccag gttcctcaaa 600
tcagatattt acttaaatct tctaaatgac ctgcaggcta atagcctaaa gtgactggtc 660
cctggctgaa gggaattaac agatagtatc aagcgcagaa ggaatgtgcc agtatggctc 720
cctgggtgaa cagcttggcc ttttttgggt gtcttgacag gccagaaga acaaatgact 780
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tcagaatata tttgtaagtt aaatcattgg tgctaataat aaatgtggat tttgtattaa 1260
aatatataga agcaatttct gtttacatgt ccttgctact tttaaaaact tgcatttatt 1320
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```

<210> 451

<211> 926

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (687)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (865)

<223> n equals a,t,g, or c

<400> 451

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aaagaatgag actggtaata acaacaacaa agatggatct aatcataaag ctgaaagtgg 120
agctctaata gaagctgcaa aatcaaagat acatcagtac aaagtacgag cttatatcca 180
aatgaagtct ctgaaagcat gtaaaaggga aatcaagtca gtcatagaata cagctggaaa 240
ttccgcaccc tctctctttc ttaaaagcaa ttttgagtac ttaagaggta attatcgaaa 300
agccgtgaag ctattaaata gttcaaacat tgctgagcat ccaggattca tgaaaacagg 360
tgaatgcttg agatgcatgt tctggaataa ccttggttgc atccattttg ccatgagcaa 420
gcacaatttg ggaatattct actttaaaaa ggctctgcaa gagaatgaca atgtctgtgc 480
acagctcagt gcaggtagca ctgatccagg taaaaaattt tcaggaagac ccatgtgtac 540
gttactaacc aataagagat atgagttgct gtataactgt ggaattcagc ttcttcacat 600
tggaaggcct cttgctgcct tcgaatgtct gattgaagct gttcagggtt atcatgcaaa 660
tcctcgctc tggtctacggc tggctgnaat gctgcattgc tgccaataag gggacttctg 720
aacaagaaac taaaggcctt cccagcaaaa aaggaattgt acagtctatt gttggkcaag 780
gctatcatcg taaaatagtt ttggcatcac agtctataca gaatactgtt tatraatgg 840
ggggcagctc tcggccattc ctgtnagcca gtatgggagt tttgcagccc atatgttctc 900
agaaatgcct ggtttgctgg ttacct                                     926
```

<210> 452

<211> 1642

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (147)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (150)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1608)

<223> n equals a,t,g, or c

<400> 452


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gggctcacac ttaccgcgcg ggaggancan cggccgggtg tccaccccca tcctgcgccc 180
agtctcctcg attccctcctg ctctgagccg ggagagccga acagctgaag agagttcact 240
gactccccag cccaggtggg gccttggtgca catcatgacc agttttgaag atgctgacac 300
agaagagaca gtaacttgct tccagatgac ggttttacat cctggccagt tgcagtgtgg 360
aatatttcag tcaataagtt ttaacagaga gaaactccct tccagcgaag tggtgaaatt 420
tggccgaaat tccaacatct gtcattatac ttttcaggac aaacaggttt cccgagttca 480
gttttctctg cagctgttta aaaaattcaa cagctcagtt ctctcctttg aaataaaaaa 540
tatgagtaaa aagaccaatc tgatcgtgga cagcagagag ctgggctacc taaataaaat 600
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accaaattag aagtttgact tttatgtgtt atacacaatc ttaaaatttc acgaattcac 1560
ctttttaata gtatccatgt acataataaa atcaaagttt aattagcnaa aaaaaaaaaa 1620
aaaaaaaaaa aaaaaaaaaa aa 1642

```

<210> 453

<211> 2254

<212> DNA

<213> Homo sapiens

<400> 453

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ccaggagcag aattttsctg accgcttcct ccctgaatga cgaggctgcc caagctctgg 180
gcaagacctg ctgggaaggc cctggtcagc cccgtggtgc agaacatcac ctcccctgat 240
gaggatggca ttagcccccct gggttggctg ctggaccagt acctggagtg tcaggaaagct 300
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ctgcagaact caagctctga actgtttggg cctcgggyag ccttcttgct ggcgctgcaa 660
aatggctgtg cgggagcctt gctgaagctc cttttctca aagctgcccc cgtgagttag 720
cagttcgccc ggcacattga ccagcagatc cagggcagcc ggatcggtgg agcccaggaa 780
atggagaggc tggcacagct gcagcaatgc ctgcaagctg tcctgatttt ctccggcttg 840
gagatagcca ccacttttga gcattattac cagcactaca tggcggaccg tctcctgggc 900
gtggtctcga gctggctgga gggggccgtg ctggagcaga tcgggtccctg cttccccaac 960

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gagtttgatt ataaaaaaaa aaaaaaaaaa aaaa 2254
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<210> 454

<211> 1931

<212> DNA

<213> Homo sapiens

<400> 454

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gcggcgggcg cagtgggtggc agcgggagac aaatggaaac ctccacaggg cacagactcc 180
atcaagatgg agaacgggca gagcacagcc gccaaagtgg ggctgcctcc cctgacgccc 240
gagcagcagg aggcccttca gaaggccaag aagtacgccâ tggagcagag catcaagagt 300
gtgctggtga agcagaccat cgcgcaccag cagcagcagc tcaccaacct gcagatggca 360
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```

<210> 455

<211> 771

<212> DNA

<213> Homo sapiens

<400> 455

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```

<210> 456

<211> 1169

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1164)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1167)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1169)

<223> n equals a,t,g, or c

<400> 456

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cttcgagaga aaaggggagg atgccactgg agtcatcctc ttcaatgcca ctatccttcc 180
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gtgaacgttt cctagaggac ctggtagcta aggcagtggc agaaaaatta caaccactgc 360
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aaaaaaaaaa aaaaaaaaaa aaanaanan                                     1169
```

<210> 457

<211> 3249

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (3234)

<223> n equals a,t,g, or c

<400> 457

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gaggggccgc gatactgggt gcccgcggtg taagcagaat tcgacgtgta tcgctgccgt 180
caagatggag gggcctttgt ccgtgttcg tgaccgcagc actggggaaa cgatccgctc 240
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<210> 458

<211> 1916

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1895)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (1902)

<223> n equals a,t,g, or c

<400> 458

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<210> 459

<211> 2773

<212> DNA

<213> Homo sapiens

<400> 459

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<210> 460

<211> 2031

<212> DNA

<213> Homo sapiens

<400> 460

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tgtggcattt gggcgctggt tggcagtgat gattgccttt ctgttcagtg tctgagtgtc 240
atgaagattg cacacagagg tccagatgca ttccgttttg agaattgtcaa tggatacacc 300

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<210> 461
<211> 1839
<212> DNA
<213> Homo sapiens
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<220>
<221> misc feature
<222> (1496)
<223> n equals a,t,g, or c
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<222> (1832)
<223> n equals a,t,g, or c
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<220>
<221> misc feature
<222> (1839)
<223> n equals a,t,g, or c
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<400> 461
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<210> 462

<211> 779

<212> DNA

<213> Homo sapiens

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<222> (26)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (731)

<223> n equals a,t,g, or c

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<221> misc feature

<222> (737)

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<221> misc feature

<222> (759)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (762)

<223> n equals a,t,g, or c

<400> 462

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<210> 463

<211> 1717

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (5)

<223> n equals a,t,g, or c

<220>

<221> misc feature

<222> (27)

<223> n equals a,t,g, or c

<400> 463

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